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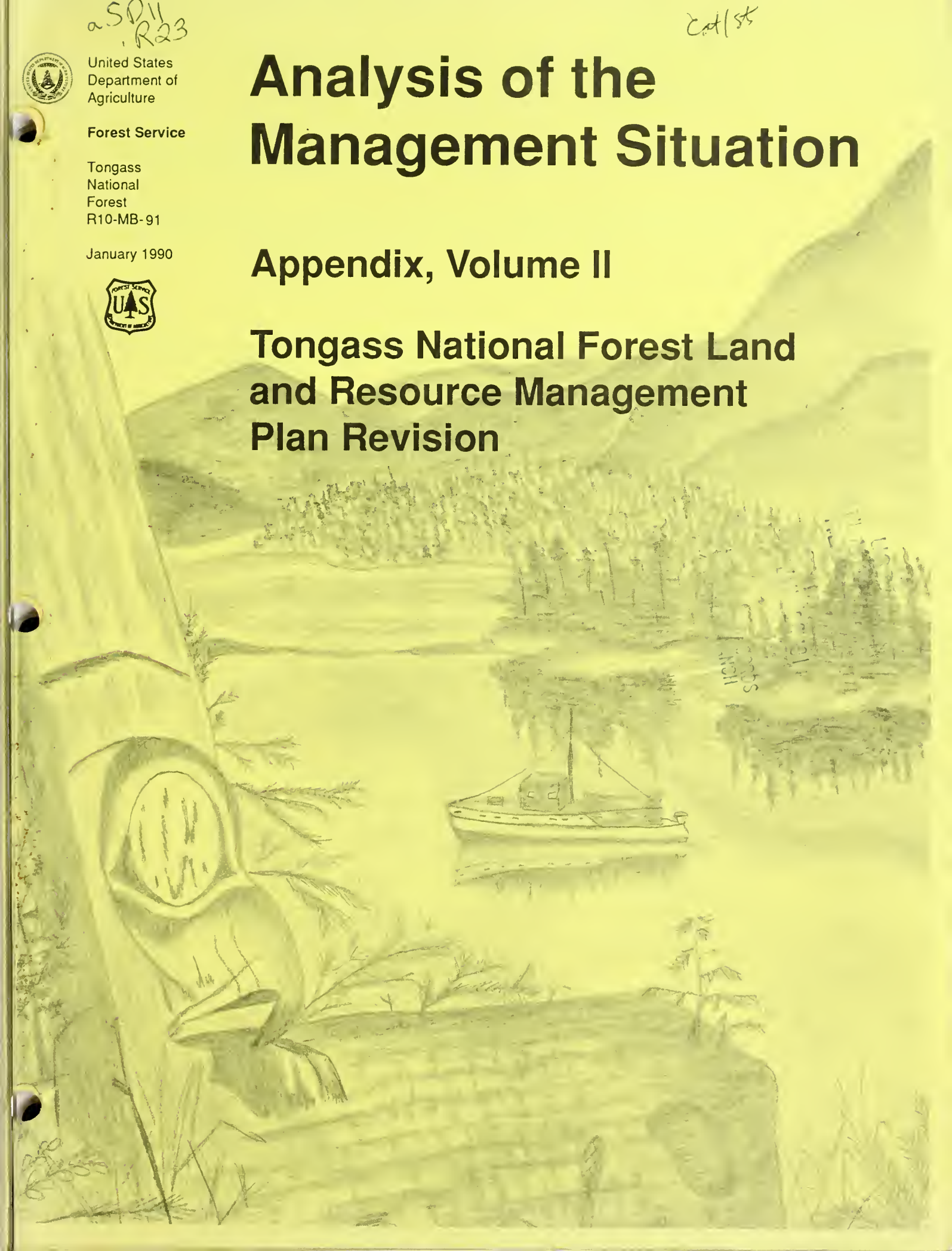


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Analysis of the Management Situation

Appendix, Volume II

Tongass National Forest Land and Resource Management Plan Revision



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**Tongass National Forest Land and
Resource Management Plan Revision**

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Research Natural Area Proposals

RESEARCH NATURAL AREA PROPOSALS FOR THE
TONGASS FOREST PLAN REVISION

Results of Research Natural Area Workshops

May 24 & 25 and July 21, 1988

Prepared by the Research Natural Area Steering Committee*

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SUMMARY

After conducting a two day workshop (May 24 & 25, 1988) to define research natural area (RNA) needs, and a one day workshop (July 21, 1988) to evaluate and prioritize over 60 RNA proposals, we developed a comprehensive plan for RNA's on the Tongass National Forest. Building upon the work done for the Regional Guide, we defined RNA needs in terms of vegetation types, and geologic, aquatic, and wildlife features.

To represent the wide geologic, biologic and climatic diversity encompassed within the Tongass National Forest, we propose that 30 new RNA's be established; or roughly 10 per administrative area (Figure 1). These 30 new RNA proposals are termed "priority RNA's" and are listed in Table 1. This proposal is roughly equivalent in density to what has been proposed for most other National Forests in their land-use plans to date (8-10 per National Forest, Juday, 1986). We propose 3-6 RNA's in each geographic province (except Lynn Canal) so that the typical features of each region are adequately represented. In many cases, valuable, well documented proposals were not recommended as priority RNA's due to redundancy in features with existing or proposed RNA's, or resource conflicts were unreasonable.

A second category, which we have termed "other recommended RNA's," was used to classify RNA proposals with good documentation and high value, but somehow redundant with priority RNA's, or with key features of lower priority than our proposed RNA's. These "other recommended RNA's" could be used to replace one or more of the priority RNA's if some of the priority RNA proposals are not selected (Table 2).

A third category, "not recommended," included RNA proposals that were redundant with our priority RNA's and had key features which were better represented by other proposals, or could be done so with less land-use conflict (Table 3).

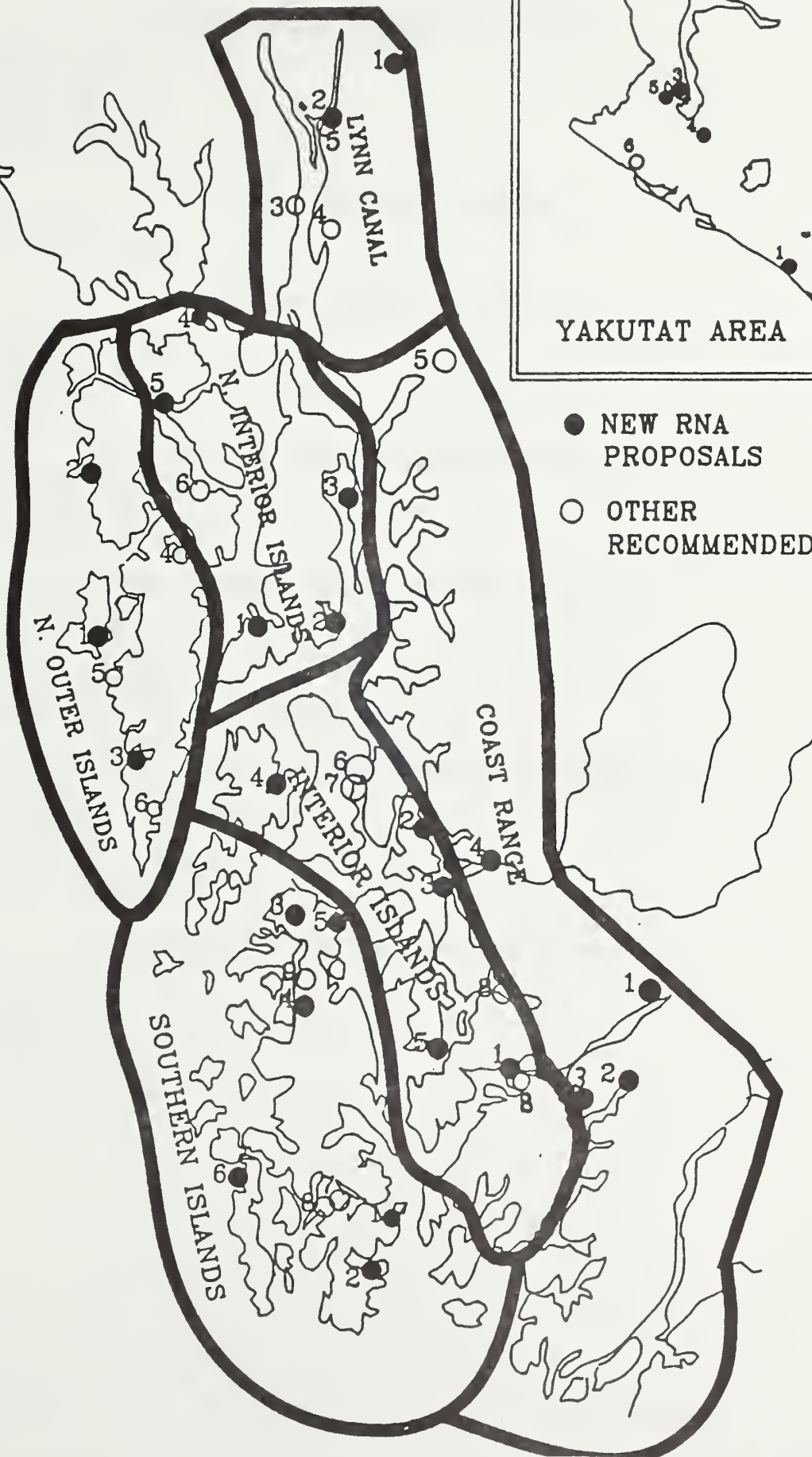
We followed procedures for selection of RNA's described in the Regional Guide. The principle result of this procedure was the recommendation of LUD I (wilderness) areas whenever possible, otherwise LUD II areas were considered, then LUD III and IV. Table 4 summarizes the RNA proposals by LUD's. Whole small drainages were preferred over portions of large drainages to minimize effects of management activities on adjoining lands. Diverse landscapes were preferred over homogeneous ones so that the greatest number of cell type needs would be included in each proposal.

The RNA system for the Tongass National Forest, as proposed, should help achieve many forest management goals including maintaining Regional biodiversity, protecting valuable wildlife and fisheries habitats, old growth protection, landscape ecology, and provide important resources for monitoring and a strong stimulus for research and educational uses of the Forest. The process of summarizing all of the resource and historical information of the 60+ proposals from the broad array of participants assembled for this report, as well as from published and unpublished reference material, by itself represents a substantial contribution to our knowledge of the biogeography of the Tongass.

As the uniqueness and scientific value of the ecosystems represented by the Tongass National Forest become more widely appreciated by educators and scientists throughout the world, demands for well documented pristine baseline areas can only increase. Increased scientific activity on the Forest should be of value to the Forest in as much as it will expand the information base for decision making as well as helping contribute to general scientific knowledge. We believe our proposal should meet, but not exceed, the legislative mandates set forth by NFMA, and the USFS manual for Research Natural Areas.



- NEW RNA PROPOSALS
- OTHER RECOMMENDED





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TABLE 1. SUMMARY OF PRIORITY RESEARCH NATURAL AREA PROPOSALS FOR
THE TONGASS FOREST PLAN REVISION

YAKUTAT FORELANDS GEOGRAPHIC PROVINCE

1. Akwe Beach RNA
2. Akwe-Ustay Lakes RNA
3. Mountain Lake RNA
4. Pike Lakes RNA
5. Upper Situk RNA

LYNN CANAL GEOGRAPHIC PROVINCE

1. Warm Pass RNA
2. Dayebas Creek RNA

COAST RANGE GEOGRAPHIC PROVINCE

1. Blue Lake Lava RNA
2. Chickamin River RNA
3. Robinson Lake RNA
4. Twin Lakes RNA

NORTHERN OUTER ISLANDS GEOGRAPHIC PROVINCE

1. Crater Ridge-Freds Creek RNA
2. Myriad Islands RNA
3. Plotnikof-Port Banks RNA

NORTHERN INTERIOR ISLANDS GEOGRAPHIC PROVINCE

1. Chaik Bay RNA
2. Gambier Bay RNA
3. Tiedeman Island RNA
4. Pleasant Island RNA
5. Upper Tenakee Inlet Hot Springs RNA

CENTRAL INTERIOR ISLANDS GEOGRAPHIC PROVINCE

1. Bailey Bay Hot Springs RNA
2. Falls Creek Windthrow RNA
3. Kadin Island RNA
4. Port Camden Fossil RNA
5. South Etolin Island RNA

SOUTHERN OUTER ISLANDS GEOGRAPHIC PROVINCE

1. Disappearance Creek RNA
2. Johnson Lake RNA
3. Mount Calder-Virginia Mountain RNA
4. Naukati RNA
5. Salmon Bay Waterfowl RNA
6. Thunder Mountain RNA

TABLE 2. OTHER RECOMMENDED RESEARCH NATURAL AREA PROPOSALS FOR
THE TONGASS FOREST PLAN REVISION

Yakutat Forelands Geographic Province

6. Lost River RNA

Lynn Canal Geographic Province

3. Lower Endicott River RNA
4. Berner's-Lace River RNA
5. Katzehin River Meadows RNA

Coast Range Geographic Province

5. Anan Creek RNA
6. Yehring Creek RNA

Northern Outer Islands Geographic Province

4. Lake Eva RNA
5. Redoubt Lake RNA
6. Lover's Creek RNA

Northern Interior Islands Geographic Province

6. Tonalite Creek RNA

Central Interior Islands Geographic Province

6. Duncan Salt Chuck RNA
7. West Duncan Uplift RNA
8. Orchard Creek RNA

Southern Outer Islands Geographic Province

7. Big Creek-Cholmondeley RNA
8. Nutkwa RNA
9. Sarkar Lakes RNA

TABLE 3. RESEARCH NATURAL AREA PROPOSALS NOT RECOMMENDED FOR
THE TONGASS FOREST PLAN REVISION

Yakutat Forelands Geographic Province

- 7. Italio River RNA
- 8. Tidal Meadows RNA

Lynn Canal Geographic Province

none

Coast Range Geographic Province

- 7. Chuck River RNA

Northern Outer Islands Geographic Province

- 7. Lisianski River RNA

Northern Interior Islands Geographic Province

- 7. King Salmon Bay RNA
- 8. Neka River Hot Springs RNA
- 9. Point Howard RNA
- 10. South Arm Hood Bay RNA
- 11. Trap Bay RNA

Central Interior Islands Geographic Province

- 9. Blind Slough RNA
- 10. Klu Bay RNA
- 11. Security Bay RNA
- 12. Seclusion Harbor RNA

Southern Outer Islands Geographic Province

- 10. Karta River RNA
- 11. Kegan Lake RNA
- 12. Klakas Lake RNA
- 13. Shaheen RNA
- 14. Stripe Mountain RNA

TABLE 4. Numbers of Priority and Other Recommended RNA's by
TLMP land allocation category.

	TLMP LAND ALLOCATION CATEGORY					TOTAL
	LUDI	LUDII	LUDIII	LUDIV	Release	
PRIORITY RNA'	11	5	7	6	1	30
OTHER RECOMMENDED RNA's	2	7	5	2		16
TOTAL	13	12	12	8	1	46

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INTRODUCTION

Scope of Natural Area Activities Nationwide

The dedication of tracts of land and water for scientific and educational use and the maintenance of natural diversity is a large and growing activity. The Forest Service has traditionally been a leader in this field, establishing the first Research Natural Area (RNA) in 1927 on the Coronado National Forest (Franklin and others 1972). By 1973 there were 100 RNA's on the National Forest System and 150 RNA's in 1986. Between 550 and 700 additional RNA's are proposed in the first generation of national forest plans covering the 154 national forests (Juday 1986).

Forty-nine state governments are operating programs to identify important elements of natural diversity and maintain compatible computerized information systems to store and retrieve the data known as natural heritage programs. At least 20 state governments have a specific legislative charter for natural area or natural heritage programs, and nearly all of the remainder operate natural area programs under administrative authority. Most states recognize the Forest Service RNA program in some formal way, through cooperative or including RNA's on a voluntary state register for example. Since 1982 over 30 states have approved new taxes, bonds, or special capital appropriations for natural area programs, often in cooperation with private sector funding (Juday 1988). In June 1988 California voters passed a bond issue for conservation and outdoor environmental programs totaling three quarters of a billion dollars, over \$40 million of which was earmarked for natural area programs per se.

The Nature Conservancy (TNC), a national organization that specializes in the identification, protection, and management of natural areas, has over 430,000 members, making it one of the largest conservation organizations in the U.S. TNC has 48 state field offices covering all 50 states. TNC manages the largest system of privately owned nature sanctuaries in the world (over 1,000 sites), and has acquired or protected 538 project areas totaling over 350,000 acres while raising \$73 million in 1987. TNC has been very active in forming partnerships with the Forest Service (Humke 1986a, 1986b, Juday 1986). TNC developed the state natural heritage program concept and methodology and has begun prototype efforts to implement natural heritage programs on national parks and possibly other management areas such as national forests.

History of Natural Area Activity in Alaska

In the late 1970's the Joint Federal-State Land Use Commission for Alaska built upon previous efforts and launched a cooperative program to identify and establish areas for scientific and educational use (Underwood and Juday 1979). The Alaska Ecological Reserves program has continued as a partnership between the state of Alaska (University of Alaska) and federal agencies (Juday 1983). The Alaska Ecological Reserves program provides a mechanism to see that each agency seeks RNA's that are most characteristic or best represented on its lands. The statewide and comprehensive focus of the program avoids duplication of efforts among agencies and insures the establishment of a network of RNA's selected from a common basis and described to a common standard of information. The Alaska Region of the

Council that launched the effort and has been one of the most important supporters of the program. To avoid a proliferation of terms, ecological reserves in Alaska have mostly been established under the RNA authority and label. Since 1980 about 25 RNA's have been formally established or approved in land use plans in Alaska, including 9 areas in the Chugach National Forest plan.

FOREST SERVICE DIRECTION FOR RNA's

Authority

The authority to establish RNA's in the national forest system comes from the general administrative authority given to the Secretary of Agriculture under the Administration Act of 1897 (16 USC 551). The Secretary has delegated this authority to the Chief of the Forest Service (7 CFR 2.42). Additional regulations implementing the National Forest Management Act (NFMA) make the selection and establishment of RNA's a part of the continuing land and resource management planning process for the national forest system (36CFR 251.23 and 219.25). The NFMA regulations provide that Forest Service Regional Guides shall identify the regional criteria to be used in establishing RNA's and the forest types, plant communities, aquatic systems, and geologic features that are needed in a representative RNA system for a given region.

The Forest Service Alaska Region RNA program is given further direction by the Alaska National Interest Lands Conservation Act (ANILCA). ANILCA established large National Forest Monuments and Wilderness Areas to maintain features of scientific importance and in support of science and research among other values.

The Alaska Region Guide

The Alaska Region Guide 1981 provides a preliminary list of plant community types, geological features, shrub species, and a restricted set of wildlife species that need to be included in the RNA system (Appendix IV). The Guide provides that the features should be searched for in candidate RNA's that optimize the combination of features and minimize land use conflicts. For the Tongass Forest Plan Revision, the RNA search is directed first to national forest monuments, then wilderness areas, and finally Land Use Designations II, III, and IV in that order.

OVERVIEW OF PROCESS AND WORKSHOPS

National Forest Management Act Regulations provide the following direction for RNA's: "Forest planning shall provide for the establishment of RNA's. Planning shall make provision for the identification of examples of important forest, shrubland, grassland, alpine, aquatic, and geologic types that have special and unique characteristics of scientific interest and importance... and that are needed to complete the National network of RNA's."

In response to this planning direction, a research natural areas workshop was organized as a cooperative effort between the Tongass Land Management Planning Team (Mark Orme), the Forestry Sciences Lab (Paul Alaback), and the University of Alaska Ecological Reserves Program (Glenn Juday). Natural resource scientists and managers were invited to attend and participate in the workshop. The workshop had two primary objectives:

1. Identify the basic units (cells) which should be represented in a Research Natural Area system on the Tongass National Forest. Another way of stating this is: "What kinds of ecosystems and unique features should be represented within Research Natural Areas in Southeast Alaska?"

2. Recommend potential areas on the Tongass National Forest which represent the cells (ecosystems) for Research Natural Area designation. The Tongass Forest Plan Revision is the best time to recommend areas for Research Natural Area status because of the opportunity to evaluate the areas with other recommended management activities and programs, and to obtain public input on the proposals.

The First Workshop

The first workshop was held on May 24 and 25, 1988. This session identified the "cell type needs" which should be represented in a Research Natural Area system on the Tongass National Forest. Workshop participants identified "cell type needs" for vegetation-soils, aquatics, and wildlife. Geology cells were incorporated into the vegetation-soils and aquatics cell types. These cell type needs are presented in Appendix II. The number of cells identified by the workshop participants is greater and more highly refined than the cells identified in the Regional Guide. This expanded number represents recent research and work in plant ecology, vegetation classification, stream channel classification, and wildlife.

To define the natural diversity of the Tongass, Paul Alaback proposed a subdivision of SE Alaska into geographic provinces. Seven geographic provinces were identified for SE Alaska (see Figure 1 and Appendix I). These geographic provinces were used primarily as a means to identify areas with distinctive regional climates, and to a lesser degree physiography and geology. RNA's were distributed within the geographic provinces to ensure that they would be representative of each of the widely contrasting environments that occur within SE Alaska.

The Second Workshop

The second session was held on July 21, 1988. During this session, specific RNA proposals were identified, evaluated and recommended to fill the highest priority cell type needs as defined in the first workshop. Workshop participants identified over 60 areas on the Tongass National Forest which could represent the cell type needs previously identified.

Since so many areas were candidate as possible new RNA's, the workshop participants felt it was important to establish criteria to identify priorities among recommended RNA sites. The following criteria were adopted:

- Recommend RNA's that satisfy the greatest number of cell needs.
- Focus RNA proposals on features declining or under greatest threat.

cell type needs.

- Consider history of research and cost effectiveness of conducting research.
- Recommend RNA's which represent the most pristine background conditions.
- Avoid conflicting land uses already established; choose RNA's as free of conflicting land uses as possible (follow Regional Guide procedures).
- Define priorities among RNA type needs.
- Consider optional RNA proposals for features that are replicated on the forest.
- Nominate only the number of RNA's which can be effectively dealt with during the life of the Plan (i.e. which can have establishment reports accomplished during the next 10-15 years).
- Articulate all important RNA type needs.

The steering committee evaluated these candidate RNA proposals using the following steps:

1. Each of the areas was evaluated using the criteria listed above and the direction for RNA's in the Regional Guide.

2. Paul Alaback, Tom Demeo and Glenn Juday conducted field trips to many of the RNA's to gain on-the-ground knowledge. Information from these field trips, additional study of available scientific and resource information, and written comments from scientists and resource specialists unable to attend the workshops, resulted in some new RNA proposals and changes in ranking.

3. Glenn Juday studied herbarium and other collection information to define uncommon plants for SE Alaska, and used this information as an additional criterion to evaluate the RNA proposals. (See Appendix III for the list of uncommon plants),

DESCRIPTION OF THE RESEARCH NATURAL AREA PROPOSALS

YAKUTAT FORELANDS GEOGRAPHIC PROVINCE

Priority RNA's

1. Akwe Beach RNA

LUD (II &) III

59 degrees 16 minutes north, 138 degrees 51 minutes west
Juneau Ranger District

Akwe Beach RNA contains a representative outer coast and beach segment of the Yakutat forelands, the only extended length of sandy beach in most of south coastal Alaska. The characteristic alternating dune ridges and low wetlands (swales) of the area are believed to be geologically very recent, perhaps only 2,000 years old. Strong storms and currents of the North Pacific are still building or modifying the beach environments, creating a specialized niche for dune plants, plant communities, shorebirds, marine mammals, and other wildlife.

Akwe Beach RNA is proposed in order to include coastal dune formations, old stabilized dunes and their vegetation, and swale wetlands plant communities. The dune ridges and swales are thought to be progressively older from the coast inland. A large freshwater lake, Triangle Lake, adds important diversity to the RNA proposal. Potential uncommon plant species include Atriplex drymarioides, Lysimachia thyrsiflora, and Saussurea americana. Significant wildlife habitats include freshwater wetland staging areas for migratory birds, and productive estuary. The RNA is within the range of moose and the glacier phase of the black bear.

2. Akwe-Ustay Lakes RNA

LUD II

59 degrees 18 minutes north, 138 degrees 33 minutes west
Juneau Ranger District

This RNA is proposed to include two low elevation lakes at the base of the mountain front overlooking the Yakutat forelands. Akwe Lake receives relatively small amounts of glacial sediment and is fed predominantly by rainwater runoff and groundwater. Ustay Lake is in contact with the terminus of Rodman Glacier and is cloudy with glacial sediment. The two lakes are especially suited for comparative hydrological studies.

The RNA offers the opportunity to study new alpine plant communities that have developed where glaciers have retreated in the Yakutat area in the recent geologic past. The alpine zone on the mountain knob separating the two lakes may include a glacial refugium of higher plant diversity and should be searched for Stellaria crassifolia, Stellaria ruscifolia, Gentiana aleutica, Veronica stelleri, Castilleja chrymactis, and Euphrasia mollis. Low elevation wetlands should be searched for

forest and tall willow shrub plant communities.

3. Mountain Lake RNA

LUD I

59 degrees 40 minutes north, 139 degrees 21 minutes west
Juneau Ranger District

This proposed RNA encompasses elevations above and below the flooding zone that forms when Hubbard Glacier blocks Russell Fiord and converts it to Russell Lake. When the lake fills to about 150 feet elevation it spills into drainages leading south across the Yakutat forelands into the Pacific Ocean. The southern portion of the RNA includes the upper portion of one of these outlets leading into Situk Lake.

Areas of the RNA below the flood line are covered with a maturing sitka spruce forest that developed on former lake bottom sometime after 1150 AD when Hubbard Glacier began its retreat from Yakutat Bay. In 1986 the ice dam temporarily formed and partially flooded the fiord, killing vegetation that was underwater for more than 2 weeks. The ice dam is forming again and may burst as in 1986 or it may stabilize and make the lake permanent. Low elevation slopes in the RNA above the floodline support old-growth western hemlock-sitka spruce forest which is relatively restricted in this part of southeast Alaska.

The RNA encompasses Mountain Lake, a narrow elongate lake carved into bedrock in a direction parallel to the flow of ice when it filled Russell Fiord. Alpine zones in the area may have been a glacial refugium, and should be searched for Stellaria ruscifolia, Veronica stelleri, Castilleja chrymactics, and Euphrasia mollis.

4. Pike Lakes RNA

LUD IV

59 degrees 29 minutes north, 139 degrees 10 minutes west
Juneau Ranger District

Pike Lakes are the only lakes in coastal Alaska south of the Alaska Range that are inhabited by northern pike. It is not known how this interior fish species reached the area. The RNA also includes one of the only coastal stands of the interior variety of lodgepole pine and several ice block depression lakes of different hydrological characteristics.

The RNA supports examples of old-growth western and mountain hemlocks, lodgepole pine, and sitka spruce. The old-growth sitka spruce-western hemlock forest type occurs on larger raised moraines, unlike the great majority of stands of this type in northern southeast Alaska which occur on steep unstable mountain slopes. Forest types that have developed on both coarse-textured well-drained soils and poorly drained organic soils are present.

The area should be searched for special plants, especially Eleocharis kamschatica, Lysimachia thyrsiflora, and Pedicularis macrodonta. The RNA is within the range of the glacier phase of black bear. Moose browse shrub habitat and graze on aquatic vegetation of the larger lakes in the RNA. The upper reaches of streams in the RNA are probably rearing habitat for sockeye salmon. The lakes are locally important waterfowl habitat.

5. Upper Situk RNA

LUD II

59 degrees 37 minutes north, 139 degrees 28 minutes west
Juneau Ranger District

This RNA is proposed to represent excellent moose habitat in the willows occupying the complex overflow channels of the former Russell Lake, and productive fisheries. When Hubbard Glacier dams Russell Fiord again and causes Russell Lake to spill over to the south this area will be modified again. The segment of the Situk River within the RNA currently contains high-quality king and coho salmon rearing habitat and supports sea-run cutthroat and fall run steelhead; it has not been stocked. The fishery could be largely destroyed during lake overflow or it may partially survive.

The area should be examined to see if it contains the uncommon plants Lysimachia thyrsiflora, Pedicularis macrodonta, and Saussurea americana.

Other Recommended RNA's

6. Lost River RNA

LUD III

59 degrees 28 minutes north, 139 degrees 37 minutes west
Juneau Ranger District

This short river supports a late (February) run of coho salmon, offering a food resource to predators at a critical time of the year. The other features of interest are the shrub communities on the complex former Russell Lake overflow channels.

Not Recommended

7. Italio River RNA

LUD (II &) IV

59 degrees 18 minutes north, 139 degrees 02 minutes west
Juneau Ranger District

This area is an alternative to the Akwe Beach RNA. It includes sandy beach and active dune formations, older stabilized dune and swale wetlands, and potential habitat for uncommon plant species and special (beach) wildlife. The area does not have as much beach, estuary, and active dune habitat as Akwe Beach RNA and does not have a large lake comparable to Triangle Lake.

8. Tidal Meadows RNA

LUD II

59 degrees 22 minutes north, 139 degrees 15 minutes west
Juneau Ranger District

This area at the mouths of the Ahrnklin, Italio, and Dangerous Rivers contains diverse shoreline features, sand dunes, estuary, and meadow. It appears to have a heavier recreation impact than Akwe Beach RNA proposal. It does not have a large lake like Triangle Lake and the ridge topography is not as well expressed as at Akwe Beach, probably because it was reworked

by Russell Lake overflow. It could serve as an alternative for certain features if they cannot be obtained elsewhere.

LYNN CANAL GEOGRAPHIC PROVINCE

Priority RNA's

1. Warm Pass RNA

LUD II

59 degrees 32 minutes north, 135 degrees 04 minutes west

Juneau Ranger District

Subalpine fir has a highly restricted distribution in southeast Alaska. It occurs mainly along a few low elevation corridors into British Columbia. Warm Pass is proposed as an RNA in order to include the northernmost example of subalpine fir in Alaska. The forests of the middle and upper portions of the valley are pure subalpine fir stands. Warm Pass Valley is the only forested portion of the U.S.-Canada border between the Taku River and Chilkat Pass. The valley has been an important migration corridor for interior species that mix with the coastal forest and tundra. Many of the interior species are rare in the Tongass National Forest. The interior alpine species Dryas integrifolia was collected in the RNA in 1988. Other possible uncommon species that should be searched for are Carex interior, Carex atrostachya, Cypripedium montanum, Calypso bulbosa, Geocaulon lividum, Thlaspi arcticum, Viola selkirkii, Chimaphila umbellata, Phyllodoce empetriformis, Phacelia mollis, Plagiobothrys cognatus, Castilleja chrymactis, Symphoricarpus albus, Lactuca biennis, and Crepis elegans.

Warm Pass Valley has a very different climate than most of southeast Alaska. Because of a pronounced rain shadow effect annual precipitation is much lower than typical coastal forest and mountains; the total at nearby Skagway is only 26 inches. The low elevation connection to interior British Columbia allows cold dry air to move through the valley in the winter. Laughton Glacier and an unnamed glacier occupy two tributary valleys on the north-facing side of the valley. Both glaciers have retreated significantly in the last several decades and appear to be still contracting. A considerable amount of recently deglaciated land is in various stages of plant colonization. The south-facing slopes across the valley a very short distance from the terminus of both glaciers were burned over in a forest fire. This may be the closest that forest fire and glaciers in North America have occurred.

The valley supports a good population of moose that utilize both the alpine shrub belt and riparian shrubs at lower elevations; moose trails and signs of browsing are abundant. Portions of Warm Pass Valley are used intensively by brown bear. Mountain goat inhabit the area.

Preliminary information about Warm Pass has been shared with the British Columbia Ecological Reserves Unit. RNA establishment and documentation here provide an excellent opportunity for international cooperation.

2. Dayebas Creek RNA

LUD II

Chilkoot and Chilkat Inlets at the head of Lynn Canal are a funnels for cold winter winds moving down from the low passes at the northern end of southeast Alaska; this region also has the highest summer temperatures and the least annual precipitation in southeast Alaska. This climate is highly localized to the long steep fiord walls leading up from tidewater shores. Dayebas Creek is a short tributary valley opening onto Chilkoot Inlet or Tayia Inlet across from Haines. Dayebas Creek RNA is proposed in order to include vegetation growing in this special climatic region including uncommon forest and tundra plants and unusual forest types. The region has served as an important migration corridor for coastal plants moving inland and interior plants moving into the coastal region. The proposed RNA also contains significant mountain goat habitat, an old hanging glacial cirque basin, periglacial features, and a large waterfall.

The lower elevations of Dayebas Creek RNA are covered with a successional paper birch-sitka spruce forest, one of the only areas of this unusual forest type in the Tongass National Forest. Western hemlock are slowly replacing the birch on all but the rockiest sites. Exceptionally large tree-sized sitka willows are scattered within paper birch-spruce stands. These stands appear to have originated from fire which is very rare on the Tongass National Forest. Some subsequent cutting took place near tidewater. Steep convex slopes in the RNA have very shallow soils over bedrock that support a dry lodgepole pine-lichen forest type. A mixed subalpine fir-mountain hemlock forest occupies the highest forested elevations. This RNA has the greatest tree species richness outside of the southern fringe of the Tongass National Forest.

Tundra communities above treeline are an unusual mixture of interior and coastal alpine types. Two plants on the list of uncommon Tongass National Forest species were collected in the RNA in 1988, the interior alpine species Dryas integrifolia and Diapensia lapponica. The alpine species Minuartia biflora was also collected in the area, the first collection in southeast or coastal Alaska for this species. Identification of other specimens collected in late in the 1988 field season is underway. Other possible uncommon species that should be searched for are Carex interior, Carex atrostachya, Cypripedium montanum, Calypso bulbosa, Geocaulon lividum, Thlaspi arcticum, Rorippa obtusa, Viola selkirkii, Chimaphila umbellata, Phacelia franklinii, Plagiobothrys cognatus, Castilleja chrymactica, Symphoricarpus albus, and Crepis elegans. Within the tundra containing interior plant species are frost-sorted stone nets and other periglacial features. Steep talus slopes that experience active frost heaving are rich in alpine species although the total plant cover is low.

The lowermost portion of Dayebas Creek plunges over the vertical wall of the fiord forming a large waterfall. The waterfall splashes directly into saltwater. The tidewater shoreline of the RNA runs almost directly north and south except for a short east-west segment immediately south of the waterfall. The short east-west ridge is bathed in spray rising vertically from the splash zone of the waterfall and is covered in a lush growth of mosses and lichens which should be searched for unusual species.

Lush alpine meadows that have not been recently glaciated provide excellent mountain goat foraging habitat. Evidence of goat grazing is abundant and at least two bands of goats were seen in the RNA during the 1988 site

visit. The RNA has other important features of goat habitat including cliffs that serve as escape terrain and easy access to both high elevation summer habitat and low elevation winter habitat.

Other Recommended RNA's

3. Lower Endicott River RNA

LUD I

58 degrees 46 minutes north, 135 degrees 19 minutes west
Juneau Ranger District

Endicott River served as an outlet for glacial meltwater flowing eastward from Glacier Bay when the Grand Pacific Glacier filled the bay 200 years ago. As the glacier thinned and retreated a low ridge at the head of Endicott River (Endicott Gap) emerged and rerouted the water and cold air southward down Glacier Bay. Vegetation of the Endicott River watershed has thus developed under both ice-affected and ice-free conditions during the last several centuries. The lower watershed is at the edge of the special northern Lynn Canal climate of drier and more continental conditions.

The interior alpine species Dryas integrifolia has been collected in the vicinity. Cypripedium montanum, Chimaphila umbellata, and Euphrasia mollis have been collected across the divide in Glacier Bay National Park. Lactuca biennis has been collected north of the RNA near Davidson Glacier. Other possible uncommon species that should be searched for are Carex interior, Carex atrostachya, Thlaspi arcticum, Viola selkirkii, Castilleja chrymactica, and Crepis elegans. The distribution of these species in the lower Endicott River watershed is not well understood, and additional collections are needed. The William Henrey Mountain area appears to have the highest potential for the uncommon plants.

This RNA offers the opportunity to conduct watershed studies, especially the development of aquatic and riparian ecosystems in relation to glacial outwash events. The RNA also contains western hemlock-sitka spruce forest communities typical of the northernmost portions of the Tongass National Forest.

4. Berners-Lace River RNA

LUD II

58 degrees 57 minutes north, 135 degrees 00 minutes west
Juneau Ranger District

The Berners-Lace River RNA proposal is designed to encompass two contrasting low elevation major river segments and associated ecosystems. The Lace River flood plain is a poorly vegetated, braided river channel that is typical of glacially fed rivers. Sediment from glacial meltwater builds up on the bed of the river faster than the river can transport it away. The active river channel eventually becomes higher than the surrounding landscape and during a high water event (sometimes a prolonged period of warm, dry weather that causes high glacial melt) the river spills over into surrounding lower terrain and abandons the old channel. This process has formed a typical broad, meandering, and poorly vegetated glacial flood plain at Lace River.

Berners River received great volumes of meltwater from the glacier flowing south off Sinclair Mountain, until the glacier retreated far enough to

expose a low bedrock divide at the head of Berners River valley. The entire meltwater flow has since been routed down the Lace River drainage. Berners River is now a classic underfit river, one that is considerably smaller than that of the flow regime that formed its valley.

The continued buildup of sediments at the mouth of Lace River in upper Berners Bay is damming up the mouth of Berners River. As a result, the broad flood plain of Berners River is a very large and dynamic wetland complex. Vegetation of the Berners valley is predominantly submerged and emergent aquatic plants with fringing freshwater sedge marshes. The valley is prime moose, waterfowl, and furbearer habitat. The sloughs and lakes connected to the Berners River channel are excellent anadromous fish habitat. Several well-worn trails along the sides of the valley and other sign attest to a large population of brown bear.

The vegetation of Berners River valley suggests that a rise in water level from the damming action at the mouth of the river is continuing. Shrubs that once occupied raised levees are now being drowned, and extensive areas of floating mat vegetation occupy the valley. As a result, unlike much freshwater wetland vegetation in southeast Alaska, the Berners River wetlands are being renewed and are not degenerating into acidic muskegs of low wildlife productivity.

A young cottonwood forest occupies point bars along the active channel of the Berners River flood plain. Slopes on either side of the valley are covered with a northern variant of western hemlock-Sitka spruce forest types.

5. Katzeihin River Meadows RNA

LUD II

59 degrees 15 minutes north, 135 degrees 10 minutes west
Juneau Ranger District

As one travels north along Lynn Canal, Katzeihin River is the last major river flowing west from the mainland before the special climatic zone at Skagway. An RNA is proposed here to include productive and species-rich alpine and subalpine meadow communities, treeline mountain hemlock sites, and a northern example of western hemlock-sitka spruce communities. The RNA contains extensive summer grazing habitat for mountain goats. Goat trails, terraces, and droppings are widespread and goats are consistently observed in the area during the summer.

Treeline plant communities include a mountain hemlock-copperbush (Cladanthamnus pyrolaeiflorus) open woodland. Extensive Lutkea pectinata patches cover talus and semi-stabilized boulders. Shallow depressions collect thick snowbanks and are species-poor, mainly a Phyllodoce aleutica-Cassiope mertensiana community. Meltwater coming off persistent snowbanks however produces a snowbank community that is rich in herbs, including species of Saxifraga, Valeriana, Campanula, Anemone, and Viola. Above treeline are an open grass and sedge subalpine meadow. Species that are common there include Carex nigricans, Luzula parviflora, Deschampsia caespitosa, Phleum commutatum, and Trisetum spicatum.

Western hemlock-sitka spruce forest types occupy the lower elevation slopes. Forests on the south-facing slopes above Katzeihin River are especially large and well developed for a site so far north in the Tongass National Forest. The north and west-facing slopes of the RNA are

especially steep and broken by cliffs even though there is a nearly complete forest canopy. Where groundwater moves over the cliffs and steep slopes by sheet flow a sitka spruce/devils club forest type occurs.

The lowermost portion of the RNA includes a section of the braided channel of the Katzeihin River. Sediment from meltwater at the terminus of Meade Glacier is causing the Katzeihin River to aggrade or build up its bed. The active river channel has shifted frequently, and most of the flood plain is in very early succession. Even though total plant cover is low on the flood plain a distinctive set of species is found in the open and changing habitat. The terminus of Meade Glacier has retreated and thinned considerably in the last several decades, but a minor readvance of only a few km would bring it to the edge of the RNA.

COAST RANGE GEOGRAPHIC PROVINCE

Priority RNA's

1. Blue Lake Lava RNA

LUD I

56 degrees 19 minutes north, 130 degrees 52 minutes west

Misty Fiords National Monument

This proposed RNA is located along the U.S.-Canada border and contains a recent lava flow that originated in British Columbia. Because of its southerly location and connection to a valley leading into British Columbia, the RNA may contain some plant species uncommon on the Tongass National Forest and stands of subalpine fir. The RNA is also proposed in order to obtain examples of mountain hemlock forest types on soils not affected by the recent lava flows. The British Columbia Ecological Reserves Unit have been informed of the RNA proposal and are interested in international cooperation.

A radiocarbon sample of a log at the surface of the lava was dated at 360 plus or minus 60 years old. Two other flows overlap the main, dated flow. Their form as well as younger vegetation on them suggest that there were two periods of volcanic activity more recent than 360 years ago. The lava flows contain smooth, ropy "pahoehoe" surfaces and blocky "ah-ah" deposits. Isolated "islands" of forest surrounded by recent lava called steptoes are present. A cone near the lower end of the flow probably represents a secondary vent. Lava contraction (from cooling) features such as drainage gutters and circular pits occur in the RNA too. The area should be searched for lava tube caves.

The volcanic vent is 5 km north of the U.S. border in British Columbia. The vent erupted laterally near the terminus of a small valley glacier. The flows moved south 12 km down Lava Fork River, continued across the border and spread into a fan at the confluence with Blue River, damming it to form Blue Lake. The lake gets its name from the blue or aquamarine color of the water that is caused by the Tyndall effect; light is refracted on the suspended clay particles in the water. The lava continued south about 9 km down Blue River valley and then stopped. There are numerous small ponds on the lava surface where water has filled depressions.

Plant succession has been relatively rapid on the lava because of the high rainfall environment of southeast Alaska. Vascular plant communities have developed where fine soil particles collected on the lava. On some lava surfaces black cottonwood trees have developed an unusual growth form with multiple root crowns and adventitious roots extending from the stem out across the surface. Lush mats of moss and rich lichen beds are found on portions of the lava surface. However, most of the lava is still barren rock. The RNA offers the opportunity to compare rates of weathering of lava surfaces with other environments in the world, and is of special interest because of the unusual combination of cool and high rainfall conditions.

2. Chickamin River RNA

LUD I

55 degrees 53 minutes north, 130 degrees 40 minutes west
Misty Fiords National Monument

This RNA has been chosen to include an extensive stand of riparian sitka spruce forest on the flood plain of a major river in the southern portion of the Tongass National Forest. This RNA will offer opportunities to conduct studies on brown bear and their utilization of anadromous fish in a mainland setting. Other animal species of interest that would be expected to occur are pine marten, wolf, river otter, and possibly some birds species limited to southern southeast Alaska such as the western screech owl and northern saw-whet owl.

The RNA has the potential to support several plants uncommon on the Tongass National Forest. Low elevation ponds should be searched for Caltha biflora. Floating vegetation mats on muskegs may contain Oxycoccus palustris, which is limited to southernmost southeast Alaska. Monotropa uniflora is a saprophyte supported by roots and fungi of a forest floor; it has been collected only once in Alaska, nearby on the mainland of southernmost southeast Alaska.

The RNA is also designed to include examples of the western hemlock/swordfern forest type.

3. Robinson Lake RNA

LUD I

55 degrees 53 minutes north, 131 degrees 02 minutes west
Misty Fiords National Monument

This RNA is focused on a natural slump lake, forest types typical of the southern portion of mainland southeast Alaska, and some uncommon plants of restricted distribution in Alaska that may occur in the area. Robinson Lake formed in recent years when a natural earthslide dammed Robinson Creek. The geomorphology and stream morphology of the area have been intensively studied by the Juneau Forestry Sciences Laboratory. The RNA extends to the shore of Behm Canal in order to include habitat diversity associated with the shoreline and proximity to deep water. Warmth given off by deep water often delays the onset of winter snows, reduces total snow accumulation at low elevations, and initiates early snowmelt in the spring.

There has been little study and documentation of terrestrial vegetation and wildlife features in the area. The RNA probably contains examples of the

western hemlock/swordfern type, the western redcedar/swordfern type, and relatively minor amounts of riparian sitka spruce forest. Higher elevations probably contain mountain hemlock types, and high and low elevation muskegs are present. Uncommon species of the Tongass National Forest that should be searched for in the area are Caltha biflora, Monotropa uniflora, Platanthera gracilis, Oxycoccus palustris, and Lycopus uniflorus.

4. Twin Lakes RNA

LUD I

56 degrees 40 minutes north, 132 degrees 16 minutes west
Wrangell Ranger District

The Stikine River is one of the few low elevation corridors from the interior of Canada that reaches the coastal forest region of southeast Alaska. The river carries a heavy glacial sediment load and has a typical braided flood plain with much early successional shrub vegetation. The Twin Lakes RNA includes extensive willow stands on the Stikine flood plain that are continually renewed by the river and are excellent moose habitat. The Stikine flood plain is one of two locations in Alaska where garter snakes have been collected, probably as the result of rafting down the Stikine River. The long-toed salamander has been reported from the flood plain also. Twin Lakes (also known as Figure Eight Lake) is located in the center of the RNA. The lake serves as an important coho salmon rearing habitat and supports sea run cutthroats that overwinter there.

Two special vegetation types occur in the RNA. Higher terraces above the river support a tall black cottonwood forest, sometimes with a successional sitka spruce understory. Salix interior is reported to be a dominant early successional plant on sandy river bars in this section of the Stikine River, but specimens to verify the report are not available. This would be the only known occurrence of Salix interior in southeast Alaska. Slopes above the river support western hemlock forest types under the influence of down-canyon winds.

A plant new to the flora of Alaska, Angelica arguta, was reported in the Kakwan Point area; specimens in flower should be collected and checked carefully against A. lucida and genuflexa. Cardamine pratensis was reported in the RNA near Twin Lakes, a significant southern range extension for this species. Limosella aquatica and Listera convallarioides were reported in southeast Alaska for the first time in the Kakwan Point area. Specimens for all these reports should be collected and, if verified, should be preserved in Alaska herbaria. The uncommon plant Lysimachia thysiflora has been collected in wetlands south of the mouth of the Stikine River and should be searched for in the RNA. Other uncommon plant species that may occur are Nymphaea tetragona, Caltha biflora, Spiraea douglasii, and Mimulus lewisii.

A low-grade geothermal system occurs in the RNA. Two tepid springs issue from host rock just a few meters above the level of Twin Lakes on its northwest shore. One spring emerges from boulders at the base of an avalanche chute. The other spring emerges from alluvium at the base of a cliff. Bedrock in the immediate vicinity of the springs is a foliated, medium-grained quartz diorite. During high water stages on the Stikine River the water level of the lake is raised, possibly flooding the springs.

One spring has a reported summer temperature of 21 degrees C, the other a temperature of 18 degrees C. Summer temperature of the springs may be lower than the winter temperature; a reading of 26 degrees C was obtained one winter. Cold surface water flows more readily down a cliff face above the springs during the warm season, diluting the heated water. Total dissolved solids and silica content are low as would be expected in a low-grade geothermal system, although magnesium content is relatively high. There are no hydrothermal deposits. The waters of the springs have a neutral pH.

Other Recommended RNA's

5. Anan Creek RNA

LUD II

56 degrees 07 minutes north, 131 degrees 54 minutes west
Wrangell Ranger District

Anan Creek RNA is designed to include a watershed with an exceptional fishery and concentration of bears. Anan Creek supports a particularly productive pink salmon fishery; the long term mean production is 200,000 pinks, one of the largest salmon runs in all of southeast Alaska. Chum, chinook, coho, and sockeye salmon, and Dolly Varden, steelhead, and cutthroat trout are also present. The largest known concentrations of black bear in the Tongass National Forest gather at the falls to fish for salmon; as many as 50 different black bears have been counted at the falls during a period of several days at the peak of salmon migration. Two bear observation stations have been constructed near two waterfalls that are partial obstacles to migrating salmon. The abundance of fish schooled up at the base of the falls, or leaping through the obstacles attract the black bears to the falls. Despite the heavy black bear use of the area, brown bear are not uncommon on Anan Creek. Beaver are abundant in the area and a series of beaver ponds and channels are found above the falls.

Anan Creek has gravels of the ideal size for spawning salmon, a constant flow of very clean water, and very low content of fine particles that clog the circulation of oxygen-rich water through spawning beds. Anan Creek plunges over two waterfalls in its lower section between Anan Lake and Bradfield Canal. The first (lower) waterfall is passable, but an obstacle, to salmon migrating upstream to the extensive spawning habitat of Anan Creek and Anan Lake and Boulder Lake. An aluminum steep-pass about 3 meters high has been installed on the first falls. The second falls is a partial fish barrier and is about 2 meters high.

6. Yehring Creek RNA

LUD II

58 degrees 28 minutes north, 133 degrees 45 minutes west
Juneau Ranger District

The Taku River is one of the few low-elevation corridors into interior British Columbia from coastal Alaska. Plant species have used this corridor as a migration route resulting in some interesting forest and tundra types. This RNA is proposed in order to include a short tributary stream to the Taku River that supports productive fisheries and a representative sample of plant communities along the river corridor. Yehring Creek is a rearing habitat for coho and sockeye salmon, and

supports sea run cutthroats and spring runs of steelhead. This stream has not been stocked so that the fish are native genotypes.

Taku Glacier blocked and damed Taku River until the last few centuries. Recent measurements of ice volume and movement in the Juneau Icefield suggest that the Taku Glacier is in an active building phase and will dam the river again relatively soon. The lower portion of the RNA would probably be flooded when the ice dam forms. The fisheries of the entire Taku River watershed would be drastically affected by the formation of an ice dam and blockage of access to saltwater.

Subalpine fir has been collected on the outwash of Wright Glacier in the northern portion of the RNA along the Taku River lowlands. Extensive black cottonwood forest stands are found along the Taku River flood plain. Mountain hemlock forest types are typical of the upper slope forests in the RNA. Total forest cover is low because most of the RNA has a north-facing aspect and much of this steep watershed basin is above 500 meters in elevation. Viola selkirkii, a rare plant species in Alaska, may occur in the RNA and has been collected nearby.

Not Recommended

7. Chuck River RNA

LUD (III &) IV

57 degrees 31 minutes north, 133 degrees 20 minutes west
Juneau Ranger District

This area represented one of the last northern mainland stands of riparian spruce forest along a major river not entered with roads and logging activity. Timber sales are now laid out in the area. The RNA contains typical examples of western and mountain hemlock forest types of the northern mainland and muskegs at a range of elevations.

NORTHERN OUTER ISLANDS GEOGRAPHIC PROVINCE

Priority RNA's

1. Crater Ridge-Freds Creek RNA

LUD III

57 degrees 04 minutes north, 135 degrees 36 minutes west
Sitka Ranger District

This RNA has been proposed in order to include examples of several major volcanic landforms and a small watershed under the unique hydrologic influence of volcanic ash soils. The area has been the subject of intensive study both from the standpoint of soils morphogenesis and ecosystem succession (Lee Klinger Ph.D dissertation, 1988) and geologic studies (Dave Brew, Jim Riehle, U.S. Geological Survey).

Crater Ridge is a caldera (collapsed volcanic summit) on a subsidiary volcanic cone 3 km northeast of Mount Edgecumbe. Crater ridge is a composite dome (made up of lava flows alternating with ash) and stands about 500 m in elevation. Two small lakes currently occupy a minor portion of the floor of the caldera although some volcanic deposits suggest that an

eruption once took place in a large caldera or "crater" lake. The profiles of Mount Edgecumbe and Crater Ridge are smooth and symmetrical, evidence that they were not carved by glaciation and thus were erupted since the end of the last Ice Age 14,000 years ago. Radiocarbon dates indicate that the various volcanic layers were erupted over a time period lasting a few hundred to 2,000 years, just prior to 9,000 years ago. A relatively thin ash layer was laid down in one or two later and final eruptions about 5,000 years ago. Buried trees and soil indicate that forest vegetation was well developed on the volcano before the final eruption. The south Kruzof volcanic field contains tholeiitic basalt and younger calcalkalic flows and pyroclastic rocks. The volcanic activity on Kruzof is of particular interest as it is related to plate movements and the complex process of terrain accretion which occurred during the late Cretaceous and early Tertiary time, and subsequent crustal movements.

Freds Creek drains the east slope of the crater summit. This watershed from summit to tidewater will allow studies of the influence of recent volcanic ash on stream flow regime and water chemistry. Porous ash soils can store large volumes of water and releases it steadily so that it stabilizes stream flow and temperatures.

Important forest types in the area include western hemlock and riparian sitka spruce; both are growing on special soils which may produce variants of the "typical" forest type. Small areas of western hemlock-Alaska yellow cedar and muskeg occur in the area also. Agrostis thurberiana, a wetland grass species on the list of uncommon Tongass National Forest plants, has been collected in the vicinity and should be searched for in the RNA. The RNA is also at the northern limit of salal (Gaultheria shallon), an indicator species in the Tongass plant associations. Klinger's Ph.D dissertation (University of Colorado) describes in great detail a transect from near sea level to high elevations on Mt. Edgecumbe including information on soils chemistry, forest composition, age and structure. His data have been used to propose his controversial ideas relating to role of Sphagnum mosses in bog formation and forest decline, with its implications for atmospheric chemistry. Long-term protection and monitoring of these sites could eventually test whether these hypotheses explain the natural successional processes occurring over this complex terrain.

2. Myriad Islands RNA

LUD I

57 degrees 37 minutes north, 136 degrees 07 minutes west
Sitka Ranger District

Myriad Islands are a set of numerous wave-battered, low elevation islands fronting the open North Pacific Ocean in the West Chichagof-Yakobi Wilderness. An RNA is proposed here to include islands of all sizes demonstrating biogeographic effects due to size and isolation from Chichagof Island; probable nesting habitat of the marbled murrelet; and the sitka spruce/Pacific reedgrass forest type. Cooperation with the state of Alaska would allow the establishment of a reserve on adjacent intertidal and subtidal habitats that are closely linked with island ecosystems. Rich kelp forests, shellfish beds, and populations of sea otters are important features of the state tidelands.

This area is free from local and regional sources of air pollution; winds arriving at the area have been cleansed by a long passage over the North Pacific Ocean. The RNA would make an excellent global background air

quality monitoring site. The RNA represents one of the most outstanding opportunities to study island biogeographic effects in north temperate marine and terrestrial ecosystems in the national forest system.

3. Plotnikof-Port Banks RNA

LUD I

56 degrees 35 minutes north, 134 degrees 55 minutes west
Sitka Ranger District

This RNA is proposed to include an oligotrophic rock basin lake system with high fisheries diversity, riparian sitka spruce, western and mountain hemlock types, Alaska yellow cedar, and muskegs. Two uncommon plants of the Tongass National Forest that may occur in the area are Poa leptocoma and Stellaria crassifolia

Ice Age glaciers carved the southern portion of Baranof Island into a series of parallel northeast-southwest trending fiords and U-shaped valleys. Port Banks is a fiord-like inlet that runs perpendicular to the orientation of most of the fiords of the island. Upstream from Port Banks the glacial U-shaped valley connected to it curves back to the general orientation of the island's fiords. The valley is occupied by two large lakes, Plotnikof and Davidof. Davidof Lake is a low elevation hanging cirque basin lake in the upper watershed. The watershed supports a summer run of steelhead, coho salmon rearing habitat in the lakes, an early run of coho, and overwintering populations of sea run cutthroat or Dolly Varden.

The lower segment of the RNA contains shoreline along Whale Bay and some exposed open coast of the North Pacific.

Other Recommended RNA's

4. Lake Eva RNA

LUD III

57 degrees 24 minutes north, 135 degrees 11 minutes west
Sitka Ranger District

The Lake Eva RNA is proposed to represent a highly productive sockeye fishery with an active history of research (Robert Armstrong's classic studies of arctic char, for example). Forest types present are typical spruce and hemlock, which have potential to serve as baseline monitoring sites for adjacent managed areas. Nearby watersheds have a long history of logging. Lake Eva is a low elevation (less than 70 meters above sea level) valley morainal lake. The lake is about 3 km long by 0.5 km wide. The features present in the Lake Eva RNA partially overlap the proposed Plotnikof-Port Banks RNA. Lake Eva is much better studied than Plotnikof-Port Banks and it is more accessible to researchers. However, the regional direction for RNA's requires that features that can be found in LUD I areas (designated Wilderness Areas) be selected in preference to other more intensive land uses. Plotnikof-Port Banks is a LUD I and Lake Eva is designated LUD III.

5. Redoubt Lake RNA

LUD II

56 degrees 53 minutes north, 135 degrees 15 minutes west
Sitka Ranger District

Redoubt Lake is one of the only large meromictic lakes in the Tongass National Forest. Meromictic lakes are characterized by a stable bottom layer that does not mix or "turn over" during the fall when cooling surface waters sink. This sinking action or annual flushing is important in aquatic ecosystems because it brings nutrients back up from the depths into the upper layers where they are available for use by photosynthetic organisms.

The factor responsible for the meromictic character of Redoubt Lake is the presence of a marine saltwater layer at the bottom of the lake. The surface of Redoubt Lake is only slightly above sea level and the lake is separated from Redoubt Bay only by a bedrock sill at the outlet. High tidal or storm surges push saltwater over the sill. Saltwater is denser than the freshwater of the lake and settles to the bottom no matter what the temperature.

The saltwater/freshwater density-stratified water column represents a chemocline. Once in place the salt layer is generally stable and will not allow mixing. Nutrients contained in dead organisms filtering to the bottom are trapped in bottom sediments and subtracted from the ecosystem. However, freshwater springs seeping through fractures in bedrock may enter the bottom of the lake and gradually degrade the chemocline by dilution until it is renewed by saltwater intrusion. In some situations meromictic lake systems have been reported to act as effective concentrators of solar energy in the unmixed bottom layer, producing unusually warm temperatures at the bottom. Redoubt Lake offers the opportunity to conduct studies of these physical and ecological phenomena.

The watershed of Redoubt Bay has a history of some logging dating back to Russian colonial times. The watershed has been stocked with game fish and the lake was fertilized at one time in an unsuccessful attempt to increase its productivity for game fish. Sport fishing use is relatively high.

6. Lover's Creek RNA

LUD II

56 degrees 24 minutes north, 134 degrees 43 minutes west
Sitka Ranger District

An RNA is proposed here in order to represent several phenomena associated with exceptionally high precipitation. This RNA is located in possibly the highest rainfall zone in North America. The official Weather Service station at Little Port Walter, a few km east of the RNA, records a long term average annual precipitation of 569 cm (224 inches); the 1987 annual total was 742 cm (292 inches). Because of orographic uplift (winds forced to rise over mountains), total precipitation in the upper elevations of the RNA is probably significantly higher.

This RNA contains productive fisheries, and alpine and rock and snow avalanche communities that occupy unusually low elevations. The proximity of the area to the open North Pacific and the unimpeded movement of storms into the area from the southwest probably results in a low freezing level and high snowfall total. As a result, treeline occupies a low elevation and much of the vegetation of the steep watershed basin is alpine tundra. The RNA is also of interest because of the presence of sitka spruce-western hemlock and yellow cedar forest types that have developed under high rainfall conditions. The area should be searched for the uncommon plants

Agrostis thurberiana, Stellaria crassifolia, Rhododendron camtschaticum, and Mimulus lewisii (collected 12 km to the north at Cliff Lake).

The area has been the subject of fisheries research since 1934, providing possibly the longest continuous record of pink salmon production on the Pacific coast. A record of air and water temperatures and stream discharge is available from the site, as well as biological information on salmon. It has been proposed for designation as an RNA as early as 1972 by the National Marine Fisheries Service and a variety of State-wide and region-wide scientific committees.

Vegetation of this RNA is similar to Plotnikof-Port Banks RNA, although the high rainfall, record of environmental data, and research history are unique.

Not Recommended

7. Lisianski River RNA

LUD IV

57 degrees 49 minutes north, 135 degrees 58 minutes west
Hoonah Ranger District

Includes productive bear and eagle habitat, large salmon runs, riparian flood plain spruce, western and mountain hemlock vegetation types, and muskegs. Wildlife and vegetation types are not as diverse as those at Tonalite Creek or in Chaik Bay. At Lisianski the flood plain spruce zone is fairly narrow and is surrounded by extensive low site and poorly drained vegetation types. The committee recommended that these ecosystem features would be better represented at the proposed Tonalite Creek or Chaik Bay RNA's.

NORTHERN INTERIOR ISLANDS GEOGRAPHIC PROVINCE

Priority RNA's

1. Chaik Bay RNA

LUD I

57 degrees 17 minutes north, 134 degrees 24 minutes west
Admiralty Island National Monument

The significance of high-productivity, low-elevation riparian sitka spruce habitat for a variety of important game and other wildlife species has become more widely understood in recent years. These high-productivity stands have been the focus of commercial timber management in the Tongass National Forest, and obtaining good examples for the RNA network in most of the major different forms they occur in the Forest becomes more difficult with time. Chaik Bay RNA in the Admiralty Island National Monument and Wilderness is a superlative example of the riparian spruce type typical of the large islands of the Forest. The river entering Chaik Bay flows through a broad, low elevation flood plain that occupies a high proportion of the entire watershed. The riparian spruce stand at Chaik Bay is one of the most extensive areas of the type on the large islands of southeast Alaska not entered for forest harvest.

Sitka black-tailed deer, brown bear, and bald eagle make intensive use of the low elevation forests at Chaik Bay. Pine marten and hairy woodpecker could be expected in the area. However, low elevations forests at Chaik Bay are not affected by a set of mammals that are common on the mainland but absent on Admiralty Island. The mammals not present include lynx, coyote, black bear, gray wolf, mountain goat, snowshoe hare, northern flying squirrel, and northern red-backed vole.

Other forest types present include western and mountain hemlock, and low and high elevation muskegs. The RNA includes broad and nearly level alpine benches at the north and south end of the watershed. The uncommon Tongass National Forest plants Mimulus lewisii, Veronica stelleri, and Castilleja chrymactica should be searched for in the alpine meadows of the RNA.

2. Gambier Bay RNA

LUD I

57 degrees 25 minutes north, 133 degrees 58 minutes west
Admiralty Island National Monument

Gambier Bay was named for an official of the British Admiralty office during the voyages of the explorer Captain George Vancouver. The area is proposed as an RNA in order to include productive wildlife habitat and a variety of special geological features. The RNA includes the shoreline of Snug Cove, a shallow arm of the restricted-circulation bay, and a segment of rocky shoreline along Stephens Passage. A Forest Service recreation cabin adjacent to the RNA accommodates visitors. The Gambier Bay shoreline is a popular brown bear hunting area. The diverse geology and the forests that have developed in response have been the subject of recent study, including the establishment of four intensively mapped permanent forest reference plots (0.1 to 0.25 ha, data available from Alaback and Juday), one of which has been monitored since 1979.

The shoreline of the Snug Cove portion of the RNA supports a very high density of nesting bald eagles. The RNA supports a high population of sitka black-tailed deer and is representative of high-quality, low elevation old-growth forest habitat important for foraging and shelter from snow. Brown bear are numerous in the area. The extensive tidal flat in Snug Cove is an integral part of the ecosystem of the RNA and is heavily used by shorebirds such as lesser yellow legs, Bonaparte's gull, sandpipers, turnstones, and plovers and to a lesser degree by great blue heron and robin. Significant numbers of migrating ducks and geese have also been reported in the area and especially in rafts or groups on the bay surface. Cooperation with the state of Alaska may allow a state reserve on the tidelands to complement the RNA.

The peninsula that divides Snug Cove from Stephens Passage (Gain Peninsula) is made up of dolomite and limestone bedrock layers standing vertically. The limestone surface is marked by solution pits - circular depressions formed by the acid groundwater dissolution of limestone bedrock. The internally-drained and nutrient-rich limestone soils produce a superlative old-growth western hemlock forest with many very large trees. Several underground streams can be heard flowing down in the limestone rock while the surface has no live stream courses. Cold springs emerge at the limestone-basalt contact near the Stephens Passage shoreline. Much of the low elevation shoreline portion of the RNA is marked by a coastal staircase bench - a series of terraces and small cliffs formed by wave erosion at different relative sea levels of the past. These

well-drained surfaces also support old-growth forest, although landslides and boulders are occasionally dislodged from the rim of the cliffs, destroying small patches of forest.

Rocky beach on the tip of Gain Peninsula and nearby Gain Island are hauling-out grounds for sea lion. Harbor seal are common in the bay.

The RNA contains a diverse set of plant communities representative of Admiralty Island. Sitka spruce/Pacific reedgrass open forest is found in a thin fringe along the Stephens Passage coast. Several western hemlock-sitka spruce forest types are present, especially the Alaska blueberry and rusty menziesia types. Shore pine-Alaska yellow-cedar and shore pine-black crowberry conifer woodland is typical of low elevation muskegs. A thin strip of large Alaska yellow-cedar trees is found along the margin of the larger muskegs and wetlands.

Well over 100 vascular plant species have been collected or noted in the area; the list of species collected, noted, or expected in the vicinity totals 430. The coastal fringe, especially along Snug Cove, is characterized by coastal elymus, bering hairgrass, and lyngby sedge herbaceous types in decreasing elevation. The lower end of national forest ownership (mean higher high tide) and the beginning of state tideland ownership occurs somewhere in this sequence.

3. Tiedeman Island RNA

LUD I

57 degrees 04 minutes north, 134 degrees 09 minutes west
Admiralty Island National Monument

Tiedeman Island is in the center of Seymour Canal, a large inlet surrounded by Admiralty Island National Monument and Wilderness. This RNA is proposed in order to include exceptionally high-density bald eagle nesting habitat in an RNA and maintain the continuity of long-term eagle studies. Muskeg and beach forest types are included in the RNA. The RNA is linked through the eagles (feeding on fish) to the marine ecosystem of Seymour canal.

Mature forest covers about 30 percent of the island. Most of the remainder supports muskeg and low productivity open woodland types. Elevations on the island are below 200 meters. There is one lake and stream watershed system on the island.

A great variety of high-quality food is available to bald eagles on the island. Fish comprise the greatest portion of the diet, although seabirds and waterfowl are seasonally important. Eagles of the area have been observed eating salmon, pollack, cod, herring, smelt, sculpins, rockfishes, flounders, and halibut. Scoters, scaup, goldeneye, bufflehead, ducks, and geese are important winter food. Carrion is available in the form of seals, sea lion, deer, bear, whales, and other wildlife.

The fringe of tall mature sitka spruce around the perimeter of the island provides ideal nesting platforms and lookout perches. About 14 percent or 320 ha of the island is in old-growth western hemlock forest.

4. Pleasant Island RNA

LUD II

58 degrees 20 minutes north, 135 degrees 39 minutes west

Hoonah Ranger District

The western portion of Pleasant Island is an important field site for researchers studying ecosystem development on recently deglaciated land surfaces in Glacier Bay National Park to the north. Pleasant Island was not covered by neoglacial advances which so drastically affected Glacier Bay as recently as two centuries ago. The island is one of the closest areas with old-growth forest, lake and muskeg ecosystems to compare with the successional surfaces in Glacier Bay National Park, and has been actively used in plant succession, ecosystem processes, aquatic ecology, and soils studies.

Geologically, Pleasant Island consists of relatively young (Tertiary: Oligocene to Miocene--about 25-16 million years old) andesitic lava flows and breccias that unconformably overlie an uneven surface that cuts across much older (late Silurian: about 420-410 million years) sandstone and siltstone turbidite beds. The latter were folded, otherwise deformed, and eroded before the flat-lying tertiary volcanic rocks were erupted. "The Knob" on the island is an undated plug of basalt; it is probably the same age or younger than the other volcanic rocks. The Silurian strata are part of a very widespread group of formations that occur throughout the Alexander Archipelago. The tertiary volcanic rocks are part of a narrow belt that extends from north of Glacier Bay proper across much of southeastern Alaska to the Misty Fjords area on the south.

Pleasant Island includes a wide representation of upland and wetland ecosystems typifying much of the northern interior island province. Muskegs include 20 species of vascular plants and 12 species of mosses and liverworts not found at low elevations in Glacier Bay. Good examples of old-growth mixed Tsuga heterophylla - Chamaecyparis nootkatensis forests occur in the eastern portion of the island. On the western portion of the island the forest primarily occupies steeper slopes along streams. The youngest surfaces, a peripheral zone near shore are covered with Sitka spruce.

Recent and ongoing studies by Daniel Engstrom have focused on the hydrological processes that are operational in the complex of old-growth forest and muskeg ecosystems on the island, and an age sequence of lakes on the island. The aquatic ecosystems on the proposed Pleasant Island RNA are being used for comparisons with a wide range of aquatic ecosystem age classes in Glacier Bay National Park. Radiocarbon dating suggests some of the bog basins on the island may be greater than 14,000 years old. Pollen and peat accumulation in lake sediment and in bogs on the island provide an important long-term record of large-scale ecosystem changes of significance to the the whole Glacier Bay area.

The island supports significant populations of bald eagle, sitka black-tailed deer, and Vancouver Canada goose. Access to the area is particularly good; Gustavus airport is just a few km north across Icy Passage.

5. Upper Tenakee Inlet Hot Springs RNA

LUD III

57 degrees 59 minutes north, 136 degrees 56 minutes west
Sitka Ranger District

This is one of the few remaining pristine hot springs in southeast Alaska. The hot water flow is concentrated in two main vents and several seeps that emerge through riparian gravel at the foot of a steep hill. The main pool is reported to have a water temperature of 76 degrees C, making it a medium-grade geothermal system. The flow rate of the combined springs is about 90 liters per minute, a moderate to low rate of flow. Sulfur content is distinctly higher (about 220 mg per liter) than at Bailey Bay Hot Springs. A large pool of hot water is generally clear and has several large old logs in it. A late winter visit during a heavy snow year showed that geothermally heated ground covers a large area around the hot springs vents.

No plant collections have been reported from the hot springs but the warm to hot soils and the special chemistry of the water could be expected to produce at least some major range extensions. Uncommon species of the Tongass National Forest that should be searched for include Scheuchzeria palustris, Poa laxiflora, Juncus nodosus, Geocaulon lividum, Stellaria crasifolia, Rhododendron camtschaticum, and Lycopus uniflorus. Lush moss communities line the edge of the pool. Tracks around the pool indicate that the hot springs is probably a seasonal wildlife concentration area, especially for deer and songbirds. Red squirrel were observed to be numerous and active unusually early in the year.

The entire mountain south of the hot springs is included in the RNA in order to encompass the groundwater infiltration and recharge zone affecting the hot springs vents. Lengths of the unnamed river above and below the hot springs discharge zone are included in order to allow studies of the stream before and after mixing with the hot water. The RNA extends across lowlands, heavily used by wildlife, to the shore of Tenakee Inlet.

Other Recommended RNA's

6. Tonalite Creek RNA

LUD III

57 degrees 37 minutes north, 135 degrees 15 minutes west
Sitka Ranger District

This RNA is proposed in order to represent a pristine example of riparian spruce, productive bear and fisheries habitat, western and mountain hemlock, muskegs, and yellow cedar vegetation types. A long history of fisheries, hydrology, and brown bear research and one of the most productive salmon fisheries in SE makes it a particularly valuable addition to the RNA system. Although riparian spruce forests are not any more extensive at Tonalite than they are at Chaik Bay, improved access and research opportunities from the proximity of recently logged areas, and a more productive fisheries makes for greater research opportunities in Tonalite Creek than at Chaik Bay. The RNA committee was unanimous in its recommendation for the designation of Tonalite as a RNA, but due to the requirement of adhering to the Regional Guide we were unable to recommend it over the LUD I of Chaik Bay, since it does contain adequate examples of the principal ecosystems needed in the RNA system for this geographic province.

Not Recommended

7. King Salmon Bay

LUD I

58 degrees 03 minutes north, 134 degrees 26 minutes west
Admiralty Island National Monument

A large RNA proposal was considered in this area at the northern end of Admiralty Island National Monument. The area has served as an important bald eagle and brown bear study site. The extensive estuary and major drainage are unusual in supporting king salmon on an island system. The RNA is a major nesting area for Canada geese and other waterfowl. Easy access to Juneau and relatively low recreational use and impact would make it a better proposal to represent brown bear and estuarine habitat than Pack Creek. The alpine slopes in the northwestern part of the proposed RNA are exceptionally diverse and have several unusual plant species and ecosystem types, such as the Carex nigricans type, and some high elevation sedge wetlands. Although King Salmon Bay would be a better RNA than Pack Creek, it was not recommended because its main ecosystem features are already included in RNA's with more diverse terrestrial features (Pack Creek, Gambier Bay, Chaik Bay).

8. Neka River Hot Springs RNA

LUD III

58 degrees 05 minutes north, 135 degrees 50 minutes west
Hoonah Ranger District

Neka River Hot Springs is a significant site and should be managed to protect its special ecological, geological, and other scientific values. However, Neka River Hot Springs area is a less desirable RNA candidate than the nearby Upper Tenakee Inlet Hot Springs. The highest water temperature in the Neka River springs is 47 degrees C, significantly lower than Tenakee Inlet and below the threshold temperature of 50 degrees C for many medium-grade and high-grade geothermal organisms. Road construction and timber harvest have disturbed much of the area surrounding Neka River Hot Springs.

The geothermal zone of the area is composed of 18 springs in a valley-bottom muskeg. The combined flow is significant (just under 300 liters per minute) but is diffused over a wide area. The water is moderately sulfurous, relatively low in silica, and has a pH of 8.1. The flora of the area has not been collected. A careful study and collection effort is needed because rare plants are known to be associated with geothermal heating zones and chemically unusual hot spring waters elsewhere in Alaska. Species that should be searched for include Scheuchzeria palustris, Poa laxiflora, Juncus nodosus, Geocaulon lividum, and Lycopus uniflorus.

9. Point Howard RNA

LUD III

58 degrees 17 minutes north, 135 degrees 03 minutes west
Juneau Ranger District

This area is located on the southern outer (western) shore of Lynn Canal near Icy Strait. It was proposed as an RNA in order to include western and mountain hemlock forest types typical of northern sections of the Tongass National Forest. However, the proposed Chaik Bay and Gambier Bay RNA's better represent the need.

The area includes both lake and stream fisheries. The potential for the occurrence of rare plants of the Tongass National Forest, especially the many species of the Lynn Canal area, is relatively low.

10. South Arm Hood Bay RNA

LUD I

57 degrees 19 minutes north, 134 degrees 17 minutes west
Admiralty Island National Monument

An excellent example of a high volume riparian spruce flood plain forest occurs here. The area also contains good examples of well drained and poorly drained hemlock and cedar vegetation types. A dense population of Sitka black tailed deer and a moderate population of brown bears are noteworthy. The flood plain spruce habitats are not as extensive as they are in Chaik Bay, although the deer habitat may be more productive. In general the RNA committee considered Chaik Bay to have a more pristine representation of flood plain spruce and a more diverse representation of both vegetative types and wildlife populations than the South arm of Hood Bay.

11. Trap Bay RNA

LUD IV

57 degrees 43 minutes north, 135 degrees 02 minutes west
Sitka Ranger District

A unique emerged cirque basin watershed extends inland from Trap Bay. The area has been an active center for hydrologic and fisheries research over the past decade. The area contains limited examples of riparian spruce flood plain forests, but extensive areas of poorly drained western and mountain hemlock types. Little representation of low elevation muskeg types occurs. The center of the basin is mostly a grassland tidal meadow, with fringes of alder close to the streams. An extensive alpine zone heavily used by brown bears and deer combined with productive coho salmon runs make the proposed RNA a valuable fisheries and wildlife habitat research area. Most of the research was initiated to provide baseline information for a proposed timber sale so that the effects of logging on stream sedimentation, fisheries habitat, forest regeneration, and stand development could be studied. The terrestrial habitats are not as diverse and the aquatic habitats are not as productive as those of the Tonalite Creek RNA or Chaik Bay RNA. It was therefore concluded that the Trap Bay RNA would not be as valuable a resource for research and education as the other proposals.

CENTRAL INTERIOR ISLANDS

Priority RNA's

1. Bailey Bay Hot Springs RNA

LUD II

55 degrees 59 minutes north, 131 degrees 39 minutes west
Ketchikan Ranger District

In southeast Alaska nearly all hot springs have been developed for resorts or public recreation. Modification of the springs for these purposes has resulted in the destruction of specially adapted high temperature organisms and delicate or unique rock formations. Bailey Bay Hot Springs are reported to have been tapped to some unknown degree for a resort before 1940. However the main vents, pools, and seepage slope are reported to be in nearly pristine condition. Bailey Bay Hot Springs has the highest surface temperature of any hot spring in southeast Alaska, and represents one of the only opportunities to include a medium to high grade (reservoir temperatures above 150 degrees C) geothermal area in an RNA anywhere in Alaska.

At least 10 major seeps and several minor seeps issue from granitic bedrock on a northwest-facing slope above Spring Creek valley; they drain into Lake Shelokum. Temperatures of the seeps range from 92 degrees C to 71 degrees C. The water at the hottest vent has a pH of 8.9.

The freshwater wetland plant Lycopus uniflorus has been collected in the RNA, one of only two known collections in southeast Alaska. The only collection in Alaska of Campanula scouleri was made in the area or at a nearby hot spring. The wetland grass Poa laxiflora should be searched for in the area; only two collections are known in Alaska.

2. Falls Creek Windthrow RNA

LUD III

56 degrees 43 minutes north, 132 degrees 52 minutes west
Petersburg Ranger District

This even-aged stand of spruce and hemlock in a small strip going up a hillside apparently followed a catastrophic windthrow event about 200 years ago. This stand has been used for growth and yield research, and could be a valuable resource for future work on forest - soils interactions. This stand is much more productive than most forests of its age, or with its soils (Karta series), presumably due to the effect of windthrow on disturbing the soil, and thereby mixing organic and mineral layers. Comparisons with nearby less disturbed soils could be used for future research. The stand is currently used as a demonstration area for illustrating maximum levels of productivity in unmanaged second-growth forests. Because high volume second-growth stands have been utilized heavily in the past they are relatively rare, and present unique research opportunities. Falls Creek is also easily accessible since it is on the Petersburg road system. The RNA committee felt the Falls Creek RNA would make a valuable addition to the RNA system, primarily by representing the cell for mature second-growth spruce-hemlock forest.

3. Kadin Island RNA

LUD III

56 degrees 32 minutes north, 132 degrees 27 minutes west
Wrangell Ranger District

This RNA is proposed because of the occurrence of a unique form of high-productivity sitka spruce/devil's club forest type. High winds moving down the Stikine River canyon pick up silt from the unvegetated glacial river flood plain and deposit it as loess on islands at the river's mouth. The continuing rain of loess onto the upper soil layers provides a supply of unleached, nutrient-rich soil material to the forests of the island.

The loess deposition overcomes the process of acid bog formation (paludification) that overtakes most stable sites of moderate topographic relief in the Tongass National Forest. Few areas in the world have a combination of high rainfall and recent loess deposition, so the properties of the soils here are of special interest. Thick loess soils also have a high water storage capacity, so the hydrology of the island is of interest too.

The fringe of the island is subject to tidal influence and changes in water level due to shifts of the river. Wetland marsh communities should be included in the RNA if possible. Uncommon plant species of the Tongass National Forest that should be searched for include the following wetland species: Glyceria leptostachya (collected near Wrangell), Eleocharis kamtschatica, Nymphaea tetragona, Caltha biflora (observed in Stikine bottomlands near Kakwan point) and Lysimachia thyrsiflora (collected in Stikine River marshes).

Kadin Island is steep-sided and cone shaped in profile. Results are available from forest stand reconstruction studies during logging on nearby Vank Island. Access to the RNA is excellent; the city of Wrangell is only about 6 km south of the area.

4. Port Camden Fossil RNA

LUD IV

56 degrees 45 minutes north, 133 degrees 55 minutes west
Petersburg Ranger District

Port Camden is a well-known fossil tree and plant locality. Exposures of individual plant remains and numerous logs of early Tertiary species occur in bluffs on either side of the bay. The fossils are estimated to be over 40 million years old. Fossils stumps and logs are present as both silicified and carbonaceous remains. Tuffaceous beds (volcanic ash) that contain carbonized imprints of plants are also present in the area. The best fossil exposures are along the shore where marine erosion removes material in the bluff and concentrates remains in the intertidal zone. Recent road construction in the vicinity carved another exposure through the fossil-bearing layer. Further excavation or accelerated erosion on the uplands may damage paleontological resources.

Several warm temperate forest species have been identified among the fossils, including bald cypress (Taxodium dubium), redwood (Sequoia langsdorfii), chestnut (Castanea castaneaefolia), hazelnut (Corylus maquarii), planetree (Planera ungerii), and the fern Osmunda doroschkiana.

5. South Etolin Island RNA

Released-no LUD

55 degrees 56 minutes north, 132 degrees 20 minutes west
Wrangell Ranger District

South Etolin Island RNA is proposed in order to include an old-growth forest of fire origin, examples of the western hemlock/western red cedar forest type, and communities within the mixed conifer series including mountain hemlock, shore pine, and red- and yellow cedar muskeg types. Forest fires are exceptionally rare in the Tongass National Forest because of high rainfall and the lack of natural ignition sources. The principal burned area within the proposed RNA regenerated from a fire that occurred

an estimated 300 years ago. Fire scars occur on many trees in the RNA, indicating that the burning history of the forest here is probably a complex mosaic. The 300 year-old fire probably escaped from native burning of a western red cedar tree or snag. Snag or tree burning was a technique natives used to hollow out logs prior to carving them with stone tools to make sea canoes. Western red cedar was the basis for the northwest Indian culture and most stands near tidewater were heavily used for items such as woven bark, baskets, house planks, poles, paddles, weirs, and canoe logs. Western red cedar is generally restricted in southeast Alaska to areas south of Sumner Strait.

Wolves occur on Etolin Island and they range into the RNA. Sitka black-tailed deer numbers, as judged by their effects on preferred browse species, are relatively low in the area. The RNA offers the opportunity to investigate possible relationships between wolves and deer.

The RNA contains the western hemlock/salal, the mixed conifer/salal, and the mixed conifer/salal/skunk cabbage communities which are restricted to the southern portion of the Tongass National Forest. Upper elevations in the area support the mountain hemlock/Alaska blueberry/cassiope community. Areas of beach and beach fringe communities add habitat diversity to the RNA.

No systematic plant collections have been made in the RNA but rare species that should be searched for include Asplenium trichomanes, Glyceria leptostachya, Oxycoccus palustris, Pentstemon serrulatus, and Mimulus lewisii.

Other Recommended RNA's

6. Duncan Salt Chuck RNA

LUD I

56 degrees 52 minutes north, 133 degrees 20 minutes west

Petersburg Ranger District

A salt chuck is a brackish lagoon usually constricted by a reversing waterfall. Fresh water from a stream or river spills over a rock shelf or obstruction during low tide stages, but during flood tide saltwater or brackish water cascades over the obstruction in the opposite direction. This unusual geological feature is found only along seacoasts with large tidal fluctuations and shorelines that are dynamic and relatively youthful so that they are not yet buried by sediments. Southeast Alaska experiences large tidal amplitudes and is dynamic because of tectonic uplift and subsidence and isostatic rebound.

Duncan Salt Chuck is one of the largest and best known salt chucks in the Tongass National Forest and is set in the Petersburg Creek-Duncan Salt Chuck Wilderness Area. The RNA is designed to include shoreline and associated upland ecosystems surrounding the restricted-circulation bay or salt lagoon in which the reversing falls occurs. Cooperation with the state of Alaska will allow the inclusion of key features below mean higher high tide in a state tidelands reserve.

Extensive muskeg and wetland communities line the level uplifted marine terrace that makes up much of the shoreline of the RNA. Little detailed inventory information is available on the plants and animals of the area. Uncommon plant species of the Tongass National Forest that should be

searched for in the RNA include Scheuchzeria palustris, Eleocharis kamschatica, Calypso bulbosa, and Nymphaea tetragona.

7. West Duncan Uplift RNA

LUD III (& IV)

56 degrees 52 minutes north, 133 degrees 20 minutes west

Petersburg Ranger District

West Duncan Uplift RNA contains special landforms that illustrate the development of a post-glacial landscape of the major islands of the Tongass National Forest. During the time of deglaciation at the end of the Wisconsin glacial period (12,000 to 14,000 years ago) what is now Kuprenof Island was a series of rocky islands because of the depression of the land surface by the weight of glacial ice. As the Wisconsin glaciers melted, vast quantities of glacial sediment were deposited among the rocky islands now comprising the mountain peaks of Kuprenof Island. Once the weight of glacial ice was removed the compressed earth crust expanded and the land surface rose by a process known as isostatic rebound. The RNA is made up entirely of level uplifted marine deposits.

The glacio-marine deposits within the area are predominately silt with sand lenses and clays. Fossils of modern marine shellfish such as cockles and pearly mussels are present. The terrace has been above sea level for about 7,000 or 8,000 years. During that time a stream system incised its meandering path down through the sediment. In the incised stream system there are several features of river morphology including paired terraces, meander scars, and abandoned channels. The streams have little further erosive power because the downcutting channels have reached bedrock obstructions.

The level, low-elevation plains of the area are one of the most extensive wetlands and muskeg surfaces in the Tongass National Forest. Little information about vegetation types and plant species is available for the area.

8. Orchard Creek RNA

LUD IV

55 degrees 47 minutes north, 131 degrees 21 minutes west

Ketchikan Ranger District

Excellent example of flood plain spruce bottomland forest, one of the highest priority cell type needs on the Tongass. Also a variety of hemlock and cedar forest types. Reconnaissance plots in the area documented its status as one of the best remaining virgin bottomland forests in the southern islands province. RNA would be contiguous with Orchard Lake and the Misty Fjords National Monument. The RNA would include alpine plant communities on both north and south facing slopes and a much larger, and perhaps more diverse drainage than that at Johnson Lake. The compatible surrounding land uses, and larger drainage would make this an ecologically more valuable RNA than Johnson Lake. Since the quality of the flood plain forests seems to be similar and the resource conflicts would probably be less (because less acres would be involved), the Johnson Lake proposal was favored over Orchard Creek.

Not Recommended

9. Blind Slough RNA

LUD IV

56 degrees 36 minutes north, 132 degrees 55 minutes west
Petersburg Ranger District

Rich wetland habitats and high bird diversity make this area of special interest, but heavy recreational impact make it undesirable for RNA purposes. Blind slough is one of the most popular recreational areas on the Petersburg road system. Vegetation types found in the RNA are at least partially redundant with the South Etolin RNA, and with some of the Falls Creek Windthrow RNA.

10. Klu Bay RNA

LUD III

55 degrees 51 minutes north, 131 degrees 24 minutes west
Ketchikan Ranger District

The proposed Klu Bay RNA contains examples of high-volume riparian spruce and western redcedar forest types typical of the southern Tongass National Forest. It contains features somewhat similar to the Johnson Lake RNA in the Southern Outer Islands geographic region. These features have been difficult to obtain in RNA candidates because of the extent of management activity in the southern portion of the forest. Because of the continuing need for these types in RNA's Klu Bay is still ranked in the "other recommended" RNA category despite the effects of recent timber sales and roads.

11. Security Bay (Information was not available for this proposal)

12. Seclusion Harbor (Information was not available for this proposal)

SOUTHERN OUTER ISLANDS GEOGRAPHIC PROVINCE

Priority RNA's

1. Disappearance Creek RNA

LUD IV

55 degrees 07 minutes north, 132 degrees 19 minutes west
Craig Ranger District

Disappearance Creek is a classic disappearing stream or underground river typical of limestone or karst regions. Rainwater leaching through conifer litter and humus becomes strongly acid. When acid groundwater comes into contact with calcium carbonate (limestone) it dissolves the rock, often following along natural bedrock fractures and bedding planes. Features that are typical of karst regions include sinkholes (circular undrained depressions), segments of underground rivers, caves, emergent cold springs, and natural bridges. The RNA should be inventoried for these karst features which have not been carefully described in temperate rainforest environments. Geomorphologists have long been interested in how karst regions evolve in all the earth's different climate regions, and the

unusual combination of cool temperatures and heavy rainfall in the RNA is of particular interest. The RNA is far enough south that if caves or caverns are present they could be important for bats and other cave organisms, which is not the case in limestone caves of northern Alaska.

The internal drainage and high nutrient status of limestone sites in southeast Alaska makes them highly productivity forest sites, and old-growth stands on marble or limestone often reach exceptional size. Forest understory vegetation in the RNA is reported to be very dense, making trail construction desirable for use of the area.

The lowermost segment of the valley is reported to contain an aboveground spring-fed stream course with high fisheries productivity. Important factors contributing to high aquatic productivity are even water temperature throughout the year, high base nutrient status, and high water quality.

The RNA is within the inferred range (because of its southerly location) and appears to have suitable habitat for the northern saw-whet and the western screech owl. Uncommon plant species that should be searched for in the RNA are Asplenium trichomanes, Scheuchzeria palustris, Danthonia spicata, Melica subulata, Platanthera gracilis, Physocarpus capitatus, Spiraea douglasii, Crataegus douglasii, Viola sempervirens, Monotropa uniflora, Oxycoccus palustris, Stachys emersonii, Mimulus lewisii, Campanula scouleri, and Cirsium edule.

2. Johnson Lake RNA

LUD III

54 degrees 56 minutes north, 132 degrees 07 minutes west
Craig Ranger District

Johnson Lake RNA contains exceptional riparian spruce habitat, high fisheries values, at least two uncommon plants of the southerly portion of the Tongass National Forest, and good examples of typical southern southeast Alaska forest types. Flood plain Sitka spruce in the RNA are very large, reaching diameters of 280 cm (110 inch); most dominant trees are 64 to 67 meters (210 to 220 feet) tall, making it one of the most superlative remaining spruce stands in SE Alaska. Basal area values are also high in the many fully stocked stands. The area of flood plain is extensive, and there is much overflow channel habitat of great value to anadromous fisheries.

Physocarpus capitatus is reported along freshwater stream margins in the area. Spiraea douglasii is reported along the lake shore. As the southernmost of the new RNA proposals for the Tongass National Forest, Johnson Lake RNA has the potential to contain several range-limited plants and animals. Some of the most significant potential plants are Asplenium trichomanes, Poa laxiflora, Juncus nodosus, Platanthera gracilis, Viola sempervirens, Monotropa uniflora, and Stachys emersonii.

3. Mount Calder-Virginia Mountain RNA

LUD IV

56 degrees 15 minutes north, 133 degrees 34 minutes west
Thorne Bay Ranger District

Mount Calder-Virginia Mountain RNA contains the only known coastal population of subalpine fir, several uncommon plant species that suggest its role as a glacial refugium, and typical southern Tongass National Forest forest communities on Prince of Wales Island. The area has a history of alpine research and will be of continuing value for additional comparative studies.

Several plants noted in the RNA are reported in southeast Alaska for the first time. These species are Androsace chamaejasme, Arctostaphylos alpina, Arnica diversifolia, Draba lactea, Draba lonchocarpa, Senecio lugens, and Woodsia glabella. A plant identified as Antennaria umbrinella is reported from the area, which would be an addition to the flora of the state. However, it is known to intergrade with A. rosea (common in northern Alaska but only 1 collection in southeast Alaska). Several plants reported on Mount Calder-Virginia Mountain are significant southward range extensions over previously known distributions in Alaska. These species include Anemone parviflora, Cerastium beeringianum, Dryas drummondii, Erigeron humilis, Oxytropis campestris, Poa alpina, Poa arctica, Salix reticulata, Saxifraga oppositifolia, Silene acaulis, Thalictrum alpinum, and Tofieldia coccinea. Most of these species are characteristic of arctic and subarctic alpine sites in interior Alaska and the high elevations of northernmost southeast Alaska. Collectively they suggest the area may have been a glacial refugium with remnants of an ice age flora characteristic of a climate colder than that of contemporary Prince of Wales Island. Additional taxonomic work on the flora of the RNA is needed, with specimens deposited in Alaska herbaria.

The subalpine fir community is made up of relatively small trees in a stand that extends to treeline and includes several wind-trained, prostrate or krumholz-form trees. The stand is located on the summit and northeast-facing slopes of the Virginia Mountain ridge system down to an elevation of about 300 m (1000 ft). The summit of Virginia Mountain and the north-facing slope of Mount Calder contain well-formed cirque basins. The south-facing slope of Mount Calder rises directly up from tidewater and contains enough rough broken ground on the summit that it may have been a nunatak during much of the Wisconsin glacial period.

Important forest types in the RNA are mountain hemlock, Alaska yellow cedar, and western hemlock series. Limestone bedrock underlies some of the area, and karst features should be looked for in the area.

4. Naukati RNA

LUD IV

55 degrees 53 minutes north, 133 degrees 07 minutes west
Thorne Bay Ranger District

The Naukati RNA represents a typical moderately productive example of mature even-aged spruce-hemlock forest in the southern islands province. Even-aged forests 150-250 years old were once extensive on western Prince of Wales Island, but have been heavily utilized in the past because of their high timber value and potential productivity. These stands are thought to have arisen from catastrophic windthrow events. Productive mature forests on marble-limestone parent materials are of key importance for research and as a baseline for management since these are the kinds of forests that are managed the most intensively. The Naukati RNA would provide an essential baseline condition for studies of forest-soil interrelationships, forest productivity, and forest-wildlife

relationships. Research on deer habitat use, understory vegetation growth, productivity, and nutrition have also been conducted in the vicinity. Because of its proximity to cutover lands of various ages, and the availability of road access the Naukati RNA would be a particularly valuable and high priority RNA for both research and educational uses.

5. Salmon Bay Waterfowl RNA

LUD III

56 degrees 16 minutes north, 133 degrees 09 minutes west

Thorne Bay Ranger District

Salmon Bay at the northeast corner of Prince of Wales Island, is a trumpeter swan overwintering area. The habitat conditions suitable for swan overwintering are very specific and limited. Once the fall migration season has passed trumpeter swans go into an energy conserving mode and become relatively immobile, apparently not capable of migrating further. In their winterin areas they strongly prefer open freshwater habitat and will move about by swimming rather than flying if possible. They feed on submerged freshwater aquatic vegetation. During cold spells when all freshwater feeding and resting areas freeze over trumpeter swans in southeast Alaska move to adjacent unfrozen brackish or saltwater lagoons. Salmon Bay and Salmon Bay Lake provide a paired lake-lagoon system, and trumpeter swans have been reported by ranger district staff in the area.

The state of Alaska has made a small land selection in the vicinity of the RNA for crucial habitat/intensive fish and wildlife harvest and undeveloped recreation.

Uplands are predominantly southern low-elevation muskeg types. A gallery forest occurs along the stream connecting the lake and estuary. Soils in the area are glacio-marine mud and gravel. The Prince of Wales road system extends to the southern edge of the area.

6. Thunder Mountain RNA

LUD IV

55 degrees 05 minutes north, 133 degrees 10 minutes west

Craig Ranger District

Thunder Mountain RNA is proposed to include a possible glacial refugium, alpine plants uncommon in the Tongass National Forest, outer coastal forest types of the southern Tongass National Forest, and potential habitat for the marbled murrelet.

Three plant species collected at about the 950 m (3110 ft) elevation on Thunder Mountain represent significant range extensions, Salix reticulata, Thalictrum alpinum, and Tofieldia pulsilla. The subalpine meadow plant community types found on Thunder Mountain are markedly different than the common types of southern southeast Alaska. The soil parent material over much of the RNA is marble, which is often associated with noteworthy plant communities, rare or uncommon plant occurrences, and high-productivity forest types.

The mountain rises directly from the outer coast of the open North Pacific, and has no high elevation snow-gathering areas behind it toward the mainland. The topography of the mountain is very steep, rough, and broken, not rounded and polished as much of mountainous southeast Alaska is. The

location and physiography of the area suggest that it may have been an ice-free nunatak during at least portions of the Wisconsin glacial period.

Thunder Mountain RNA appears to contain suitable nesting habitat for the marbled murrelet. The marbled murrelet is a bird of outer coastal and open marine waters that is reported to nest in old-growth forest tree cavities or the forest understory in areas with good access to tidewater. The murrelet's terrestrial habits are poorly known. The marbled murrelet has been seen on land with young as far north as Sitka and nesting is documented from the Queen Charlotte Islands immediately south of the RNA across Dixon Entrance.

The RNA, located on the outer coast of Dall Island, is subject to rapid changes in weather as storms quickly develop and move onshore from the open North Pacific Ocean.

Other Recommended RNA's

7. Big Creek-Cholmondeley RNA (also known as Lagoon Creek)
LUD III
55 degrees 13 minutes north, 132 degrees 25 minutes west
Craig Ranger District

The Big Creek-Cholmondeley area contains an excellent example of riparian flood plain spruce forest, and associated hydrologic and fisheries features, including steelhead, coho, chum, and pink salmon runs. The stream is a temperature sensitive, braided channel system. Although the riparian flood plain spruce type representation is good, and this is the highest priority feature for the Southern Islands geographic province, the RNA committee felt that the Johnson Lake RNA would be a better candidate. The Johnson Lake RNA includes a greater variety of hydrologic and vegetative features than Big Creek, and has more complete documentation of vegetative features. More on-the-ground reconnaissance is needed to determine the relative value of all of the major pristine examples of flood plain spruce forest in the Southern Islands province.

8. Nutkwa River
LUD IV
55 degrees 11 minutes north, 132 degrees 29 minutes west
Craig Ranger District

Riparian spruce, stream fisheries, typical southern forest and muskegs are found along Nutkwa River. The area contains a more diverse array of vegetative and hydrologic types than in Big Creek, but with less of a productive lake fisheries and associated features than at Johnson Lake. If Johnson Lake were not available as an RNA the Nutkwa would probably be the best alternative, but more on-the-ground reconnaissance is needed to see the representativeness of their flood plain forests region-wide.

9. Sarkar Lakes RNA
LUD II
55 degrees 58 minutes north, 133 degrees 07 minutes west
Thorne Bay Ranger District

Sarkar Lakes RNA is proposed because its watershed system supports a significant run of sockeye salmon. Sockeye runs are known from only about 60 of the 3,000 streams in southeast Alaska that support anadromous fisheries. The availability of lake habitat for a juvenile rearing stage is an important factor in high-productivity sockeye fisheries. The Sockeye run at Sarkar Lakes is important for commercial and sport harvest and is monitored at a weir by the Alaska Department of Fish and Game for the U.S.-Canada salmon treaty. The Sarkar Lakes system has high population of coho salmon, cutthroat, dolly varden; pink salmon occur also.

The watershed of Sarkar Lakes is on limestone bedrock that contributes to the high productivity of the aquatic ecosystem, especially high densities of juvenile salmon. The lakes are representative of low-elevation gently rolling glaciated terrain, unlike the many valley moraine lakes in the mountains of southeast Alaska. Warmer water temperatures in this low elevation watershed may also contribute to high aquatic productivity. Studies at Sarkar Lakes have shown that juvenile sockeye grow faster, get bigger, and go to sea earlier than in many other lake and streams where they occur in southeast Alaska.

Not Recommended

10. Karta River RNA

Released-no LUD

55 degrees 34 minutes north, 132 degrees 36 minutes west
Thorne Bay Ranger District

Hemlock-cedar forest, fire history, productive trout and salmon fisheries are the principal features at Karta River. The forests around Karta were burned in about 1905, in one of the largest documented fires on Prince of Wales Island in the past century. Most of the sites are relatively poorly drained with a high density of western redcedar. A key feature of the area is a series of lakes and an excellent trail system linking them from salt water up through the highest lake. The lake and stream fisheries are highly productive, and are the main focus of heavy recreational activity in the area. Heavy recreational impacts, and the somewhat atypical forest types represented makes the Karta River RNA somewhat less valuable than the priority RNA's for providing good pristine baseline conditions in this geographic province. Two sets of four permanent forest growth plots have been established in the area, and information is available on stand structure, productivity, and understory biomass, productivity and structure.

11. Kegan Lake RNA

LUD II

55 degrees 04 minutes north, 132 degrees 12 minutes west
Craig Ranger District

The proposed Kegan Lake RNA contains riparian spruce, lake and stream fisheries, and typical southern forest, but is affected by heavy recreational use (sport fishing). The area could be a possible alternative to the Johnson Lake RNA proposal. Good representation of flood plain spruce vegetation types, and associated hydrologic and fisheries features are present. The area also has good examples of well drained to poorly drained western hemlock plant associations. A productive lake and stream fishery makes this area of particular value for an RNA. The committee did

not recommend this area over Johnson Lake, however, because of less on-the-ground documentation of the flood plain spruce forest, and recreational conflicts.

12. Klakas Lake RNA

LUD I

55 degrees 02 minutes north, 132 degrees 23 minutes west
Craig Ranger District

No data were available to document the RNA values of this area. It is reported to contain a riparian sitka spruce forest and lake and stream fisheries that may fit some RNA needs. This area may be an alternative to the Johnson Lake RNA proposal, and should be evaluated as a possible substitute if Johnson Lake is not available.

13. Shaheen RNA

LUD IV

55 degrees 45 minutes north, 133 degrees 15 minutes west
Thorne Bay Ranger District

Shaheen Creek is an excellent example of exceptionally large flood plain sitka spruce forest. The area is one of the oldest documented flood plain stands on Prince of Wales Island. It has the largest and oldest Sitka spruce tree of any permanent study plot in SE Alaska (118 inches (300 cm) in diameter and 800 years old). The area includes some tidal shoreline and is prime bald eagle habitat. However, the diversity of RNA type need features is low and the stand is isolated by adjacent logging effects; the only side of the stand that is intact is along the stream. For these reasons Shaheen was not recommended as an RNA at this time. The stand is of continuing ecological value because of the history of research in it and the existence of permanent forest monitoring plots.

14. Stripe Mountain RNA

LUD II

54 degrees 42 minutes north, 132 degrees 52 minutes west
Craig Ranger District

Stripe Mountain was considered as an alternative to Thunder Mountain but it is lower in elevation, more biogeographically isolated, and smaller, making it much less likely to have been a glacial refugium. The area has not been documented on the ground and it may contain some special natural features suitable for special area designation. A reevaluation of the Stripe Mountain RNA proposal would be necessary if significant features on the RNA needs list were discovered.

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APPENDIX I

DESCRIPTIONS OF THE GEOGRAPHIC PROVINCES

GEOGRAPHIC PROVINCES

1. Yakutat Forelands. Includes Glacier Bay north to Yakutat Bay. Recently uplifted beaches and active fluvial processes related to icefields, valley glaciers and cold wet climate distinguish this region from the rest of SE Alaska.

2. Northern Outer Islands. Rugged highly dissected topography, exposed extremely wet outer coastal environment, and extensive alpine environments with productive forested areas highly fragmented and usually concentrated on oversteepened slopes and on valley bottoms.

3. Lynn Canal. The driest and one of the most continental environments in SE Alaska. Extreme rain shadow from the Chilkats and St. Elias Range allows extensive development of fire dependant forests (lodgepole and birch), and the southern and westward extension of boreal forest and tundra plant species. Rugged scoured terrain with large vertical relief.

4. Coast Range. Rugged heavily glaciated terrain with extensive alpine and ice field environments. Productive forest land usually confined to river valleys and marine terraces. British Columbia batholith has major influence over the shore area. This province may be logically divided into two subzones, perhaps divided at the Bradfield Canal with more extensive alpine and active glaciation to the north, and less extensive ice to the south.

5. Central Interior Islands. Includes Kupreanof lowlands and surrounding areas protected from storms off of the outer coast and generally moderate in precipitation and temperature extremes. Includes several major rain shadow areas such as northwest Kupreanof and parts of Etolin. Generally subdued rolling topography and extensive muskeg areas.

6. Northern Interior Islands. Includes eastern Chichagof and Admiralty Islands. Protected from full force of storms off of the outer coast, but with colder climate and more rugged topography than in the central interior islands province. Also, with distinctive fauna. Originally considered a sub-province of the northern outer islands, but because of its contrast in climate and geology with the outer coast and Baranof, it was redefined as its own province.

7. Southern Outer Islands. Rolling subdued topography to the north and localized rugged topography to the south. Includes many refugia, unique plant and animal populations at the northern extent of their natural range, and highly productive forests, especially on limestone and marble soils derived from ancient coral reefs.

APPENDIX II

RESOURCE CELL TYPE NEEDS

VEGETATION CELL TYPE NEEDS

The Forest Service Region-10 ecology program has recently expanded its forest plant association ecosystem classification system to include the entirety of the Tongass National Forest. The availability of this information, and that from FSL research on plant ecology makes the definition of the biotic diversity of the Tongass much more precise than that made in the original Regional Guide, and should be used as key criteria in establishing a comprehensive Research Natural Area network.

The forest plant associations are divided into seven major series based on dominant tree species:

1. Western hemlock-Sitka spruce
2. Sitka spruce (riparian)
3. Western hemlock-Alaska cedar
4. Mountain hemlock (subalpine)
5. Mixed conifer (muskeg or open forest)
6. Western hemlock-western redcedar
7. Sitka spruce-black cottonwood

Within each of these series individual plant associations have been defined which include dominant understory plants. In total approximately 54 plant associations have been defined for the Tongass

In this appendix key vegetative features both for typical forest types and unique ones are identified for each geographic province. In some cases these features encompass whole series and in others an especially critical or unique feature justifies using just one plant association as a cell type. Primary emphasis has been placed on forest plant associations since these are the most likely to be impacted by management, and are the most relevant as a baseline to compare with managed areas. For the non-forest types, cell types from the Regional Guide are still valid, but lack of on-the-ground resource information precluded their use for all but a few RNA proposals.

These following cell types were used in helping evaluate and rank the value of existing and proposed RNA's:

I. Yakutat

Typical vegetative features:

1. Riparian Sitka spruce (devils club, salmonberry, and blueberry understories)
2. Upland western hemlock series (highly productive with shield fern through to poorly drained skunkcabbage understories)

3. Mountain hemlock series (blueberry, copper bush, heather, and false hellebore understories).
4. Sitka spruce-cottonwood forests on recent uplifted beach soils and in association with active floodplains (alder, willow, and devils club understories).
5. Glacial outwash meadows with sandy beach deposits.
6. Willow dominated brush fields

Special types:

7. Disjunct populations of shore pine and associated muskeg features.
8. Post-glaciation successional types, including sea level valley glaciers as well as ice-dammed areas.

II. Northern outer islands

Typical features:

1. Riparian Sitka spruce (devils club, salmonberry, and blueberry understories)
2. Upland western hemlock series (highly productive with shield fern through to poorly drained skunkcabbage understories)
3. Mountain hemlock series (blueberry, copper bush, heather, and false hellebore understories).
4. Western hemlock-Alaska cedar series (productive blueberry types through to less productive skunkcabbage associations).
5. Muskeg types including blanket bogs and sloping bogs (blueberry, skunkcabbage, deer cabbage, lady fern, shore pine-crowberry associations).

Special types:

6. Exposed outer coast Sitka spruce-Pacific reedgrass beach forests.
7. Sitka spruce-sweet gale in protected coves.
8. Recent volcanic ash successional types.
9. Extensive ice retreat-glacial successional types
10. Hot springs

III. Northern interior islands

Typical features:

1. Riparian Sitka spruce (devils club, salmonberry, and blueberry understories)
2. Upland western hemlock series (highly productive with shield fern through to poorly drained skunkcabbage understories)
3. Mountain hemlock series (blueberry, copper bush, heather, and false hellebore understories).
4. Western hemlock-Alaska cedar series (productive blueberry types through to less productive skunkcabbage associations).
5. Muskeg types including blanket bogs and sloping bogs (blueberry, skunkcabbage, deer cabbage, lady fern, shore pine-crowberry associations).

Special types:

6. Hot springs.

IV. Lynn Canal

Typical features:

1. Riparian Sitka spruce (devils club, salmonberry, and blueberry understories)
2. Upland western hemlock series (highly productive with shield fern through to poorly drained skunkcabbage understories)
3. Mountain hemlock series (blueberry, copper bush, heather, and false hellebore understories).
4. Western hemlock-Alaska cedar series (productive blueberry types through to less productive skunkcabbage associations).
5. Muskeg types including blanket bogs and sloping bogs (blueberry, skunkcabbage, deer cabbage, lady fern, shore pine-crowberry associations).
6. Sitka spruce-cottonwood floodplain and marine terrace forests (alder, willow, devils club understories).

Special types:

7. Lodgepole pine forests of fire origin.
8. High elevation subalpine fir forests at northwest extent of natural range.
9. Sitka spruce-sweet gale in protected coves.
10. Isolated nunatak floras.
11. Southern and western extent of range of various alpine and forest plant species near Canadian border.

V. Coast Range

Typical features:

1. Riparian Sitka spruce (devils club, salmonberry, and blueberry understories)
2. Upland western hemlock series (highly productive with shield fern through to poorly drained skunkcabbage understories)
3. Mountain hemlock series (blueberry, copper bush, heather, and false hellebore understories).
4. Western hemlock-Alaska cedar series (productive blueberry types through to less productive skunkcabbage associations).
5. Muskeg types including blanket bogs and sloping bogs (blueberry, skunkcabbage, deer cabbage, lady fern, shore pine-crowberry associations).
6. Western hemlock-western redcedar series (blueberry, swordfern, skunkcabbage, devils club, salal understories)

Special types:

7. Recent lava flow successional types
8. Pacific silver-fir at northern extent of range
9. Swordfern, and salal at northern extent of range
10. Large river gorges with more continental climate and isolated populations of boreal plant species.

VI. Central interior islands

Typical features:

1. Riparian Sitka spruce (devils club, salmonberry, and blueberry understories)
2. Upland western hemlock series (highly productive with shield fern through to poorly drained skunkcabbage understories)
3. Mountain hemlock series (blueberry, copper bush, heather, and false hellebore understories).
4. Western hemlock-Alaska cedar series (productive blueberry types through to less productive skunkcabbage associations).
5. Muskeg types including blanket bogs and sloping bogs (blueberry, skunkcabbage, deer cabbage, lady fern, shore pine-crowberry associations).
6. Western hemlock-western redcedar series (blueberry, swordfern, skunkcabbage, devils club, salal understories)
7. Beach Sitka spruce-false lily of the valley forest.

Special types:

8. Northern extent of range of western redcedar
9. Northern extent of range of swordfern, salal
10. Highly productive mature old-growth even-aged forests of fire origin in rainshadow areas (western hemlock series with blueberry understory)
11. Productive Sitka spruce-devils club enchanters nightshade on active loess soils.
12. Hot springs.

VII. Southern outer islands

Typical features:

1. Riparian Sitka spruce (devils club, salmonberry, and blueberry understories)
2. Upland western hemlock series (highly productive with shield fern through to poorly drained skunkcabbage understories)
3. Western hemlock-western redcedar series (blueberry, swordfern, skunkcabbage, devils club, salal understories)
4. Mountain hemlock series (blueberry, copper bush, heather, and false hellebore understories).

5. Muskeg types including blanket bogs and sloping bogs (blueberry, skunkcabbage, deer cabbage, lady fern, shore pine-crowberry associations).

Special types:

6. Exposed outer coast Sitka spruce-Pacific reedgrass, meadow rue, beach forests.

7. Productive mature even-aged forests (blueberry-shield fern associations, 150-300 years old)

8. Productive old-growth forests on gentle topography, limestone-marble soils derived from ancient coral reefs.

9. Sitka spruce sweet gale in protected coves.

10. Glacial refugia with disjunct populations of subalpine fir.

11. Glacial refugia and disjunct populations of alpine plant species with some at their northern extent of range.

12. Northern extent of range for Pacific yew and associated species.

13. Hemlock series forests and meadow vegetation on ultramafic bedrock types.

Matrix for evaluation of RNA proposals by vegetation cell type needs. An "x" indicates that a RNA proposal has at least a minimal representation of that cell type. A "*" indicates that a RNA proposal has an exceptional example of this cell type. Parenthesis represent already established RNA's.

I. YAKUTAT

	1	2	3	4	5	6	7	8
Akwe Beach					*	x		
Akwe-Ustay Lakes				x		x		x
Mountain Lake	x	x	x					
Pike Lakes		x					*	
Upper Situk	x				x	*		
Lost River	x				x	x		
Italio River	x				x			
Tidal Meadows					x			

II. Northern outer islands

	1	2	3	4	5	6	7	8	9	10
Crater Ridge	x	x	x	x	x			x		
Myriad Islands						*	?			
Plotnikof-Pt Banks	x	x	x	x	x	x	?			
Lake Eva	x	x	x	x						
Redoubt Lake		x		x						
Lover's Creek	x	x	x	x	x					
Lisianski River	*	x		x	x					

III. Northern interior islands

	1	2	3	4	5	6
(Pack Creek)	x	x	x	x	x	
Chaik Bay	*	x	x	x	x	
Gambier Bay	x	*	x	x	x	
Tiedeman Island	x	x				
Pleasant Island	x	x		x	x	
Upper Tenakee		x	x	x		*
Tonalite Creek	*	x	x	x	x	
King Salmon Bay	x	x			x	
Neka River	x	x				x
Point Howard	x	x	x	x	x	
Hood Bay	*	x	x	x	x	
Trap Bay	x	x	x	x		

IV. Lynn Canal

	1	2	3	4	5	6	7	8	9	10	11
Warm Pass			x				x	x		x	x
Dayebas Creek		x	x			*	x				x
Lower Endicott	x	x	x	x		?					
Berners-Lace River											
Katzehin River											

V. Coast Range

	1	2	3	4	5	6	7	8	9	10
(Limestone Inlet)		x	x	x	x			*		
(Red River)		x	x	x		x				
(Cape Fanshaw)		x		*						
Blue Lake-Lava flow		x	x		x	x	*			
Chickamin River	*	x	x		x	x				
Robinson Lake	x	x	x		x	x				
Twin Lakes		x	x		x				x	*
Anan Creek	x	x	x		x	x				
Yehring Creek		x	x		x					x
Chuck River	*	x	x	x						

VI. Central Interior Islands

	1	2	3	4	5	6	7	8	9	10	11	12
Bailey Bay	x	x			x	x	x					*
Falls Creek		x		x						*		
Kadin Island		x									*	
Port Camden	x	x					x					
South Etolin	x	x	x		x	*	x	x		x		
Duncan Salt Chuck		x			x	x	x					
West Duncan Uplift		x			*	x	x					
Blind Slough		x	x		x	x						
Klu Bay	x	x	x			x						
Orchard Creek	*	x	x	x	x							
Security Bay												
Seclusion Harbor												

VII. Southern Outer Islands

	1	2	3	4	5	6	7	8	9	10	11	12	13
(Dog Island)		x	x		x							*	
(Old Tom Creek)	x	x	x	x	x								
Disappearance Creek	x	x	x	x	?			x					
Johnson Lake	*	x	x	x	x								
Mount Calder		x	x	x	x					*	x		
Naukati							*						
Salmon Bay		x	x		x								
Thunder Mountain	x	x	x	x	x	x			?	?	*		
Big Creek	x	x	x	x									
Nutkwa	x	x	x	x									
Sarkar Lakes		x	x		x								
Karta River		x	x	x	x								
Kegan Lakes	x	x	x	x	x								
Klakas Lake	x	x	x	x	x								
Shaheen Creek	x	x											
Stripe Mountain	x	x	x	x						?	?		

AQUATIC CELL TYPE NEEDS

Lake Attribute Cell Types

- 1,2,3 oligotrophic, eutrophic, meromictic (with a chemocline)
- 4,5 alkaline, acidic
- 6,7 clear, stained
- 8,9 high altitude, low altitude
- 10,11 stratifying (with thermocline), non-stratifying (without thermocline)
- 12 with outlet, without outlet
- 13,14 anadromous, no anadromous, barren, resident only
- 15,16 with cutthroat, no cutthroat
- 17 with lake spawning sockeye
- 17a high productivity

Lake Type Cell Types

- 18 hanging (cirque)
- 19 rockbasin (primarily bedrock controlled)
- 20 kettle
- 21 muskeg ponds and small lakes
- 22 salt chuck (not really a true lake)
- 23 proglacial (lake occupying a basin in front of a glacier)

Unique System Cell Types

- 24 Pike Lakes
- 25 volcanic lakes
- 26 a dune lake
- 27 a landslide lake
- 28 Lava Fork River - Blue River
- 29 island race of king salmon
- 30 limestone creek that goes subsurface
- 31 a volcanic lava/ash system
- 32 a meromictic lake
- 33 a hot springs
- 34 a very late run of coho salmon (February)
- 35 summer run of steelhead

Fish Attribute Cell Types

- 36 island king salmon
- 37 high quality king salmon rearing
- 38 mainland king
- 39,40 systems free of stocking (need small and large lakes/streams)
- 41 lake rearing coho
- 42 stream rearing coho
- 43 early run coho
- 45 late run coho
- 46 trophy cutthroats

- 47 fall run steelhead
- 48 summer run steelhead
- 49 lake spawning sockeye
- 50 stream rearing sockeye
- 51 pink salmon only systems (steep)
- 52 systems with high diversity
- 53 sea run cutthroats
- 54 northern pike
- 55 overwintering sea run cutthroats and dolly varden
- 56 landlocked lakes with no cutthroats, only dolly varden and kokanee
- 56a hooligan
- 56b high productivity for fish
- 56c northern run of spring steelhead
- 56d resident native rainbow

Estuarine Cell Types

- 57 type E1 (extensive flats, deposits, which include mudflats with bivalves)
- 58 glacial large flats
- 59 small deltas (type E2), generally with large size substrate
- 60 outer coast, rock headlands
- 61 long-shore drift - channel outlets includes estuaries inside of sand dunes (outer coasts only)

- 62 Temperature sensitive stream cell type

The following table displays the aquatic cell types within the RNA proposals. This information was developed at the July 21, 1988 workshop and is not considered a complete display for each RNA proposal. It represents the knowledge of workshop participants at the time of the workshop.

RNA PROPOSALS	GL. OUTWASH	GL. MAINLAND	ALLUV. U VALLEY	ROCK BASIN	SLOPE TO SALT	ROLL. GRND. MORaine	RAISED MARINE TER.	AQUATIC CELL TYPES
YAKUTAT PROVINCE								
Pike Lakes	X							5.7.13.14.24.50.54
Akwe Lake	CLEAR					LAKE		12.13.15.23.40.42.56A
Ustay Lake	PRO-			PRO-		GLACIAL		7.13.17.23.40.49.50
Itallo	SAME AS							53.56A
Mountain Lake				X				6.9.10.12.13.17.17A.
Upper Situk River	X							49. NO FISH STOCKING
Lost River	X							6.8.13.17A.37.38.40.
Akwe Beach								42.45.47.50.53.56ABC
								57
								34.42.45.56A.57.
								LATE RUN COHO
						X		2.7.12.13.15.42.50.
								53.56A.61
LYNN CANAL PROVINCE								
Warm Pass								
Lower Endicott River								
Katzehin River								
Berner's-Lace Rivers								
								40.42.56B.58
COAST RANGE PROVINCE								
Limestone Inlet								
(existing RNA)								
Cape Fanshaw								
(existing RNA)								
Red River								

RNA AQUATIC CELLS

RNA PROPOSALS	GL. OUTWASH	GL. MAINLAND	ALLUV. U. VALLEY	ROCK BASIN	SLOPE TO SALT	HOLL. GRND. MORaine	RAISED MARINE TER.	AQUATIC CELL TYPES
(existing RNA)								
Klu Bay			X					
Chuck River			X				156B	
Twin Lakes							19.13.41.53.55	
Yehring Creek		X					40.42.50.53.56B.56C	
Chickamin River		X					37.38.40.42.56A&B.57	
Blue Lake Lava								
Anan Creek			X	X			152.56B	
Robinson Lake							127	
N. OUTER IS. PROVINCE								
Kadaehan/Tonalite			X				133	
Crater Ridge							13.25	
Plotnikof-Port Banks				X			1.6.12.13.15.18.19.	
Myriad Islands							35.41.43.48	
Lisianski River			X				42.56B.57	
Trap Bay			X				42	
Redoubt Lake			X				3.9.10.12.13.17.32.	
Point Howard						X	41.42.49.55	
N. INTERIOR IS. PROVINCE								

RNA AQUATIC CELLS

RNA PROPOSALS	GL. OUTWASH	GL. MAINLAND	ALLUV. U	VALLEY	ROCK BASIN	SLOPE TO SALT	HOLL. GRND. MORaine	RAISED MARINE TER.	AQUATIC CELL TYPES
Pack Creek (existing RNA)				X					
Upper Tenakee Hot Spr.				X					33
King Salmon Bay				X					29.36.40.42.57
Pleasant Island									
Gambler Bay				X					
Chalk Bay				X					
Tiedeman Island									
C. INTERIOR IS. PROVINCE									
Falls Creek Windthrow									
West Duncan Uplift							X		62
Rynda Island									
South Etolin									
Port Camden Fossil									
Security Bay									
Seclusion Harbor									
S. OUTER IS. PROVINCE									
Dog Island (existing)									

RNA AQUATIC CELLS

RNA PROPOSALS	GL. OUTWASH	GL. MAINLAND	ALLUV. U VALLEY	ROCK BASIN	SLOPE TO SALT	ROLL. GHND. MORaine	RAISED MARINE TER.	AQUATIC CELL TYPES
Old Tom Creek (existing)							X	
Johnson Lake			X					13.15
Kegan Lake			X					560
Naukatl								
Mt. Calder-Virginia Mtn								
Big Cr.-Cholmondeley			X					41.42.53
Nutkwa			X					
Sarkar Lakes						X		13.15.49.53.55
Thunder Mountain								
Disappearance Creek				X				30.560
Karter River			X					13.17A.18.47.560
Salmon Bay Waterfowl								41.42.53.55

WILDLIFE CELL TYPE NEEDS

Management Indicator Species Cell Types

<u>Species</u>	<u>Cell Type Needs</u>
1. Brown bear	a. Areas with cave dens b. Habitats with high population densities utilizing tidal meadows, both on an island situation and mainland c. Habitats with high population densities along anadromous fish streams, both on an island situation and mainland d. Alpine feeding areas, both on an island situation and mainland
2. Bald eagle	a. High density nesting habitat b. Possibly also a winter roosting area
3. Sitka black-tailed deer	a. Habitats with a high density population in optimal winter range with no wolf predation b. Habitats with a high density population in optimal winter range with wolf and bear predation c. Summer alpine habitat
4. Vancouver Canada goose	a. Nesting
5. Mtn. Goat	a. Natural winter range habitat, southern mainland and northern mainland (low elevation) b. Summer alpine habitat
6. Moose	a. Summer and winter habitat, preferably in the Yakutat and Stikine areas
7. Pine marten	a. Natural mainland habitat b. Possibly an area on Prince of Wales Island
8 Wolf	a. Habitat would coincide with deer and/or moose habitats
9. Black bear	a. Habitats with a feeding concentration along an anadromous fish stream, both on an island and mainland
10. Hairy woodpecker	a. Nesting habitat
11. Brown creeper	a. Large diameter trees providing optimum nesting and wintering habitat
12. Common merganser	a. Nesting and brood rearing habitat
13. Red squirrel	a. Year around habitat

- | | |
|----------------------------|--|
| 14. Red-breasted sapsucker | a. Nesting habitat |
| 15. River Otter | a. Beach fringe habitat and riparian habitat
b. Denning habitat in uplands
c. Inland lakes habitat |
| 16. Blue grouse | a. ?? (none were identified by the workshop participants) |

Special Interest Species

<u>Species</u>	<u>Cell Type Needs</u>
17. Steller's sea lion	a. Haulout sites
18. Harbor seal	a. Haulout site with no icebergs
19. Sea bird colonies	a. Nesting habitat (rookeries)
20. Marbled murrelet	a. Nesting habitat (will require more research to define exactly what constitutes nesting habitat)
21. Trumpeter swan	a. Nesting habitat b. Wintering habitat
22. Common loon	a. ?? (none were identified by the workshop participants)
23. Glacier color phase of black bear	a. ?? (none were identified by the workshop participants)

Unique Species

<u>Species</u>	<u>Cell Type Needs</u>
24. Garter snake	a. ?? (none were identified by the workshop participants)
25. Prince of Wales flying squirrel	a. ?? (none were identified by the workshop participants)
26. Long-toed salamander	a. ?? (none were identified by the workshop participants)
27. Osprey	a. Nesting habitat
28. Spruce grouse	a. Habitat on Prince of Wales Island
29. Peregrine falcon	a. Nesting habitat
30. Saw-whet owl	a. ?? (none were identified by the workshop participants)
31. Goshawk	a. Nesting habitat

- | | |
|----------------------------|---|
| 32. Screech owl | a. ?? (none were identified by the workshop participants) |
| 33. Coronation Island vole | a. ?? (none were identified by the workshop participants) |
| 34. Prince of Wales ermine | a. ?? (none were identified by the workshop participants) |
| 35. Sumez Island ermine | a. ?? (none were identified by the workshop participants) |

The work group suggested that the above species be placed into two groups: a) those species with the most interest and or priority for being represented within a RNA; and b) those species with a less interest or priority for being represented within an RNA.

Species placed in group A included brown bear, bald eagle, deer, Vancouver Canada goose, mtn. goat, moose, marten, wolf, black bear, river otter, blue grouse, Steller's sea lion, harbor seal, trumpeter swan, Prince of Wales flying squirrel, peregrine falcon, and Coronation Island vole.

Species placed in group B included the hairy woodpecker, brown creeper, red squirrel, common merganser, red-breasted sapsucker, marbled murrelet, common loon, glacier phase of the black bear, garter snake, rough-skinned newt, osprey, spruce grouse, saw-whet owl, goshawk, and screech owl.

The work group recognized that many of the cell type needs listed above were not mutually exclusive of one another, and many could be satisfied within a few carefully selected RNAs. Eight general types of habitats were identified by the work group which, if represented in RNA's, would satisfy many of the cell type needs. These eight general types of habitats are:

1. Riparian spruce habitat which would provide cell needs for the black bear, brown bear, river otter, common merganser, and pine marten.
2. A range of high to low volume upland hemlock/spruce habitats which would provide cell needs for deer, pine marten, blue grouse, wolf, cavity nesting species, mtn. goats (rocky, low elevation winter), and goose.
3. Alpine/subalpine habitats which would provide cell needs for deer (summer), mtn. goats, blue grouse, wolf.
4. Wetland habitats which would provide cell needs for swans and geese.
5. Beach fringe habitats which would provide cell needs for eagles, otter, black and brown bears, deer (winter), and marten (summer and winter).
6. Estuary habitats which would provide cell needs for black and brown bears, geese, common merganser, and moose.
7. Deciduous shrub habitats which would provide cell needs for moose and wolf.
8. Isolated small islands to represent small mammal island biogeography effects.

The work group then prioritized these eight general habitats for identifying and recommending RNA's. The priority is as follows:

1. Riparian spruce, estuary, beach fringe.
2. High volume upland hemlock/spruce.
3. Isolated small islands.
4. The remaining habitats.

The work group also recommended that each of the eight general habitats should be represented in an RNA within each of the geographic provinces described by Paul Alaback.

The following table displays the wildlife cell types within the RNA proposals. This information was developed at the July 21, 1988 workshop and is not considered a complete display for each RNA proposal. It represents the knowledge of workshop participants at the time of the workshop. (Three general types of estuary habitats were recognized by the workshop participants: Elymus habitats, sedge habitats, and meadow habitats. In the estuary column in the following table, an X1 indicates only one type of estuary habitat present, an X2 indicates two types present, and an X3 indicates three types present)

RNA WILDLIFE CELLS

RNA PROPOSALS	RIP. SPR.	HI. VOL. HEM.	LO. VOL. HEM.	SUB-ALP. & ALP.	WETLAND	BEACH FR.	ESTUARY	DECID. SHRUB	SMALL IS.	SPECIES CELL TYPES
YAKUTAT PROVINCE										
Pike Lakes			X		X					6,23
Akwe Lake	X				X			X		1,2,6,21
Ustay Lake	X				X			X		1,2,6
Itallo	X					X	X3	X		1,2,6
Mountain Lake			X	X	X					
Upper Situk River								X		1,2,6-9,21,23
Lost River								X		1,2,6-9,21,23
Akwe Beach	X				X	X	X3	X		1,2,6,21
LYNN CANAL PROVINCE										
Warm Pass			X	X						5
Lower Endicott River	X		X	X		X	X2	X		Corridor to Glacier
Katzehin River			X	X			X2	X		Bay National Park
Berner's-Lace Rivers	X		X	X	X		X3	X		5
										1,5,6,8,9
COAST RANGE PROVINCE										
Limestone Inlet (existing RNA)		X	X	X		X	X3			
Cape Fanshaw (existing RNA)			X							
Red River (existing RNA)		X	X	X		X	X3			

RNA WILDLIFE CELLS

RNA PROPOSALS	RIP. SPR.	III. VOL. HEM.	LO. VOL. HEM.	SUB-ALP. & ALP.	WETLAND	BEACH FR.	ESTUARY	DECID. SHRUB	SMALL IS.	SPECIES CELL TYPES
Klu Bay	X	X	X	X			X2			
Chuck River	X	X	X				X2			
Twin Lakes			X	X	X			X		1.2.5-9.15.16.24.26
Yehring Creek				X	X			X		5.24
Chickamin River	X	X	X	X	X	X	X2	X		1.2.4-6.8.9.15.18.21 22
Blue Lake Lava										
Anan Creek	X	X	X	X	X					9
Robinson Lake	X		X	X	X					5.8
N. OUTER IS. PROVINCE										
Kadashan/Tonalite	X	X	X		X	X	X3			1.3.4.7.10-12.14.15
Crater Ridge										
Plotnikof-Port Banks	X			X	X	X				
Myriad islands									X	2.15.19
Lisianski River	X		X			X	X3			1.3.7
Trap Bay	X	X	X	X	X	X	X3			1.3
Redoubt Lake										
Point Howard	X		X	X		X	X3			1.5.7.8.9.15
N. INTERIOR IS. PROVINCE										

RNA PROPOSALS	RIP. SPR.	HIL. VOL. HEM.	LO. VOL. HEM.	SUB-ALP. & ALP.	WETLAND	BEACH FR.	ESTUARY	DECID. SHRUB	SMALL IS.	SPECIES CELL TYPES
Pack Creek (existing RNA)	X	X	X	X		X	X3			1,3,4,15
Upper Tenakee Hot Spr.			X			X	X1			
King Salmon Bay			X	X	X	X	X3			1-4,7,10-16
Pleasant Island		X	X		X	X				2,3,4
Gambler Bay		X	X		X	X	X3			1-4,15,18
Chalk Bay	X	X	X	X	X	X	X3			1-4,7,10-16
Tiedeman Island		X	X		X	X				1-4,7,15,16,18
C. INTERIOR IS. PROVINCE										
Falls Creek Windthrow		X								
West Duncan Uplift			X		X	X	X3			
Rynda Island						X			X	2
South Etollin		X				X				
Port Camden Passall						X				7,9
Security Bay										
Seclusion Harbor										
S. OUTER IS. PROVINCE										
Dog Island (existing)			X			X			X	
Old Tom Creek			X		X	X	X			8

RNA WILDLIFE CELLS

RNA PROPOSALS	RIP. SPR.	HI. VOL. HEM.	LO. VOL. HEM.	SUB-ALP. & ALP.	WETLAND	BEACH PR.	ESTUARY	DECID. SHRUB	SMALL IS.	SPECIES CELL TYPES
(existing)										
Johnson Lake	X	X	X	X	X				8	
Kegan Lake	X	X	X		X					
Neukati		X								
Mt. Calder-Virginia Mtn			X	X						
Big Cr.-Cholmondeley	X	X	X	X					7,8,9,15,25,34	
Nutkwa	X	X	X			X1			7,8,15,25,34	
Sarkar Lakes									3,4,7-9,15,18,21,22,25,34	
Thunder Mountain	X	X	X	X	X	X1				
Disappearance Creek	X	X	X		X	X			2,3,9	
Kartar River			X	X	X					
Salmon Bay Waterfowl			X		X	X1			2-4,7-9,15,21	

APPENDIX III

RARE, UNCOMMON, OR SCIENTIFICALLY INTERESTING VASCULAR PLANT SPECIES NEEDED IN
NEW RESEARCH NATURAL AREAS

RARE, UNCOMMON, OR SCIENTIFICALLY INTERESTING VASCULAR PLANT SPECIES NEEDED
IN NEW RESEARCH NATURAL AREAS, TONGASS NATIONAL FOREST

G.Juday

<u>Species</u>	<u>Page # in Hulten's Flora of Alaska</u>	<u>Rationale, characteristics, and distribution</u>
1. <u>Cryptogramma stelleri</u> (S.G. Gmel.) Prantl	45	Rare in SE, found on shaded calcareous rocks, northern SE, along Haines Highway
2. <u>Asplenium trichomanes</u> L.	46	Rock ledges, two collections in central SE (T 64 S, R 76 E, section 7, on Prince of Wales and Coronation Islands)
3. <u>Woodsia glabella</u> R. Br.	52	Fern of calcareous rock, common in northern Alaska, not collected in SE, reported from Mount Calder-Virginia Mountain RNA
4. <u>Scheuchzeria palustris</u> (Fern.) Hult.	81	Uncommon but several new collection localities recently in SE, southcentral, and interior Alaska; bogs: Whitestone Harbor on Chichagof Island, especially sections 4 and 9, T 44 S, R 63 E
5. <u>Agrostis thurberiana</u> (Hitchc.) Hult.	96	Uncommon, two SE and two southcentral Alaska collections, Baranof and Kruzof Islands, wetlands
6. <u>Danthonia spicata</u> (L.) Beauv.	122	One Alaska collection (near Ketchikan), dry places
7. <u>Melica subulata</u> (Griseb.) Scribn.	125	Uncommon, collections at Warren-Maurell Islands and Suemez Island on southerly point between Cape Felix and Arena Cove (behind beach under sitka spruce)
8. <u>Poa laxiflora</u> Buckl.	133	Rare, Alaska collections at Cape Fox Springs; upper beach at Port Houghton (T 52 S, R 77 E, section 9; also T 53 S, R 77 E, section 33)
9. <u>Glyceria leptostachya</u> Buckl.	151	Shallow water; two collections in Alaska; south of Wrangell, and at T 71 S, R 81 E, section 13

10. <u>Eleocharis kamschatica</u> (C. A. Mey.) Kom.	211	Wetlands, uncommon, occurs in northern SE, collected in marshes near Juneau airport
11. <u>Carex atrostachya</u> Olney	232	Dry meadows, uncommon in Alaska, northern SE
12. <u>Carex interior</u> Bailey	245	Two Alaska collections, northern SE, wet meadows
13. <u>Juncus nodosus</u> L.	290	Swamps & hot springs; southern SE, three Alaska collections, new localities in Murray and Lipkin (1987)
14. <u>Cypripedium montanum</u> Dougl.	317	Northern SE mainland, two Alaska collections (Glacier Bay and Mile 8 of Haines Highway in woods and above timberline at nearby Iron Mountain
15. <u>Platanthera gracilis</u> Lindl.	323	Southern SE, taxon is rare. Murray and Lipkin (1987) suggest collection to resolve taxonomy, Annette Island at 55 degrees 15 minutes north, 131 degrees, 31 minutes west
16. <u>Listera convallarioides</u> (Sw.) Nutt.	326	Wetland species, globally common but rare in Alaska, reported in proposed Twin Lakes RNA in Stikine River canyon
17. <u>Calypso bulbosa</u> (L.) Rchb.f.	331	Unusual spotty distribution, good collections from Gull Island in Lynn Canal and Clearing Point Island at T 40 S, R 57 E, section 29
18. <u>Salix interior</u> Rowlee	362	Sandbar habitats along rivers, not previously collected from southeast Alaska, reported in proposed Twin Lakes RNA
19. <u>Geocaulon lividum</u> (Richards.) Fern.	373	Unusual species in SE, northern SE mainland, collections at Montana Creek near Juneau and on Baranof Island in muskeg near warm springs
20. <u>Atriplex drymarioides</u> Standl.	397	Outer coast, one SE collection at West Chichagof Island on east shore of Slocum Arm on beach
21. <u>Stellaria crassifolia</u> Ehrh	413	Common interior alpine species; only SE collections are at Baranoff Island, Mendenhall Glacier, and Yakutat area (T 30 S, R 38 E)

22.	<u>Stellaria ruscifolia</u> Pall.	417	Rare in Alaska outside Aleutian Islands (three collections), only SE collection is in Yakutat block
23.	<u>Nymphaea tetragona</u> Georgi	449	Aquatic species, central SE, two collections
24.	<u>Caltha biflora</u> DC.	452	Uncommon in Alaska; southern SE; aquatic species limited to northwestern North America; collected at Misty Fiords National Monument at 1800 feet above Big Goat Lake at T 73 S, R 97 E, section 19, and near Ketchikan at 55 degrees 24 minutes north, 131 degrees 44 minutes west
25.	<u>Thlaspi arcticum</u> Pors.	498	Category 2 species (federally listed species apparently threatened or endangered but more information needed, several recent collections, possible along British Columbia border near Skagway
26.	<u>Rorippa obtusa</u> (Nutt.) Britt.	510	Shores, northern SE, rare in Alaska
27.	<u>Cardamine pratensis</u> (Hook.) O.E.Schulz	514	Globally common but rare in SE, reported in proposed Twin Lakes RNA, significant southern range extension.
28.	<u>Draba lonchocarpa</u> Rydb.	523	Rocky alpine species, one collection in northernmost SE, reported from Mount Calder-Virginia Mountain RNA
29.	<u>Draba lactea</u> Adams Spreng	527	Not collected in SE, common in northern Alaska, mountain tundra species, reported from Mount Calder-Virginia Mountain RNA
30.	<u>Mitella nuda</u> L.	586	Along streams and bogs, globally common but known in Alaska only from a few collections, northern SE
31.	<u>Physocarpus capitatus</u> (Pursh) Ktze.	593	Southern SE, streambanks and mesic sites, not rare but species of special biogeographic interest, Charley Creek on Kosciusko Island; Tuxekan Island; Prince of Wales Island (T 68 S, R 79 E, section 21)

32. Spiraea douglasii Hook 594 Southern SE; not rare but species of special biogeographic interest; Annette Island, Hyder area, Wrangell (56 degrees 18 minutes north, 132 degrees 23 minutes west), Anita Bay (56 degrees 14 minutes north, 132 degrees 23 minutes west)
33. Crataegus douglasii Lindl. 600 Southern SE, Hyder area and central Prince of Wales Island
34. Dryas integrifolia M. Vahl 631 Northern SE, collection from William Henry Mountain area on Chilkat Peninsula (58 degrees 45 minutes north, 135 degrees 15 minutes west), new collection from proposed Warm Pass RNA
35. Viola sempervirens Greene 680 Few Alaska collections, southern and central Prince of Wales Island
36. Viola selkirkii Pursh 682 Northern SE, rare in Alaska, possible in Juneau-Taku River area
37. Angelica arguta Nutt. (705) New to the flora of Alaska if identified specimen is correct (should be checked against A. lucida and A. genuflexa), reported in the Kakwan Point area of proposed Twin Lakes RNA in Stikine River canyon
38. Chimaphila umbellata (L.) 710
Barton Northern SE, three Alaska collections; Beardslee Islands in Glacier Bay National Park (58 degrees 03 minutes north, 135 degrees 52 minutes west), Gold Creek near Juneau, Lynn Canal shore
39. Monotropa uniflora L. 715 Southern SE. one Alaska collection
40. Rhododendron camtschaticum 719
Pall. Alpine areas Chichagof and Yakobi Islands, two collections in SE
41. Phyllodoce empetrifomis 722
(Sm.) D. Don Limited distribution in Alaska, northern SE, may occur at proposed Warm Pass RNA, some potential at proposed Katzeihin River Meadows RNA
42. Arctostaphylos alpina (L.) 730
Spreng Not collected in SE, common in northern Alaska, tundra species reported from Mount Calder-Virginia Mountain RNA

43. Oxycoccus palustris Pers. 736 Southern SE, one Alaska collection
44. Diapensia lapponica L. 736 Common species in northern Alaska, one highly disjunct population in northern SE
45. Androsace chamaejasme Host 745 Not previously collected in SE, common in northern Alaska, rocky sites in mountains, reported from Mount Calder-Virginia Mountain RNA
46. Lysimachia thyrsiflora L. 750 Northern SE, only scattered collection in Alaska, wet marshes; mouth of Situk River (59 degrees 26 minutes north, 139 degrees 32 minutes west) and Stikine River mouth (56 degrees 20 minutes north, 132 degrees 36 minutes west)
47. Armeria maritima (Mill.) Willd. 752 One SE Alaska collection, seashores, northern SE
48. Gentiana aleutica Cham. & Schlecht. 760 Meadows, northern SE, rare in Alaska
49. Phacelia mollis Macbr. 770 Northern SE, dry slopes & roadsides, limited global distribution, sensitive species (Murray and Lipkin 1987)
50. Phacelia franklinii (R. Br.) Gray 770 Northern SE, species occurs only in northwestern North America, scattered distribution, sandy disturbed soil, new collection in Murray and Lipkin (1987)
51. Plagiobothrys cognatus (Greene) Johnston 776 Wet places, northern SE, limited range, one collection 1 km north of Skagway near railroad
52. Stachys emersonii Piper 789 Moist woods, southern Prince of Wales and Annette Islands, species restricted to Pacific northwest
53. Satureja douglasii (Benth) Briq. 790 One Alaska collection near Juneau
54. Lycopus uniflorus Michx. 791 Southern SE, limited Alaska distribution, 2 Alaska collections (Yes Bay at 55 degrees 55 minutes north, 131 degrees 48 minutes west, and Bailey Bay Hot Springs-Lake Shelokum area)

55. <u>Pentstemon serrulatus</u> Menzies	795	Southern SE mainland, wet sites, Alaska collections at Hyder (55 degrees 55 minutes north, 130 degrees 08 minutes west), also at 56 degrees 03 minutes north, 130 degrees 06 minutes west
56. <u>Mimulus lewisii</u> Pursh	796	Southern SE and Douglas Island, wetlands and stream banks, Alaska collections are Cliff Lake (56 degrees 32 minutes north, 134 degrees 46 minutes west), and Hyder (55 degrees 55 minutes north, 130 degrees 08 minutes west)
57. <u>Limosella aquatica</u> L.	797	Species of wet mud habitats, few Alaska collections (none in SE), reported in proposed Twin Lakes RNA in Stikine River canyon
58. <u>Veronica stelleri</u> Pall.	803	Alpine meadows, northern SE, one Alaska collection
59. <u>Castilleja chrymactis</u> Pennell	808	Endemic of SE Alaska, northern SE, taxonomic questions to resolve (Murray and Lipkin 1987)
60. <u>Euphrasia mollis</u> (Ledeb.) Wettst.	814	Subalpine meadows; northern SE and Yakutat area; several recent collections (Mendenhall River bridge) 3km from Bartlett Cove in Glacier Bay National Park, Eagle River at Juneau, southwest side of Tarr Inlet, near Situk River bridge
61. <u>Pedicularis macrodonta</u> Richards.	820	Fens (non-acid, treeless peaty wetlands), Yakutat area, taxonomic questions
62. <u>Galium kamtschaticum</u> Steller	839	Rare in Alaska, two Alaska collection (one near Juneau), wet mossy places
63. <u>Symphoricarpus albus</u> (L.) Blake	842	Northern SE (herbarium specimen from Lynn canal shore at 59 degrees 26 minutes north), species not globally rare but distribution highly restricted in Alaska, species of biogeographic interest

64. Campanula scouleri Hook. 849 Southern SE, uncommon in Alaska, woods and rocks (may be associated with hot springs)
65. Antennaria umbrinella Rydb (878) New to the flora of Alaska, reported from Mount Calder-Virginia Mountain RNA, according to Hitchcock's Flora of the Pacific Northwest, "... intergrades freely with A. alpina at high elevations and less freely with A. rosea below. Much of what passes for A. media is better referred here."
66. Arnica diversifolia Greene 921 Taxonomic questions, may be of hybrid origin, only 1 or 2 Alaska collections, reported from Mount Calder-Virginia Mountain RNA
67. Senecio lugens Richards. 935 Alpine species, common in northern Alaska, collected in northernmost SE, reported from Mount Calder-Virginia Mountain RNA
68. Saussurea americana DC. 936 Restricted distribution in northern SE, mesic meadows, (Yakutat area ocean shoreline; Red Barron Lk. on Admiralty Island at 58 degrees 12 minutes north, 134 degrees 50 minutes west; Mount Roberts at 58 degrees 18 minutes north, 134 degrees 24 minutes west; and Berg Mountain at 58 degrees 56 minutes north, 135 degrees 47 minutes west)
69. Cirsium edule Nutt. 940 Globally uncommon, southern SE
70. Lactuca biennis (Moench) 952 Wet habitats, northern SE, two Alaska Fern. collections, (Davidson Glacier on Lynn Canal at 59 degrees 06 minutes north, 135 degrees 24 minutes west)
71. Crepis elegans Hook. 956 Gravel in alpine zone, northern SE

APPENDIX IV

DIRECTION FROM THE REGIONAL GUIDE FOR RESEARCH NATURAL AREAS

Appendix A

RESEARCH NATURAL AREAS/ECOLOGICAL RESERVES

OVERVIEW

In accordance with current planning direction, a system of research natural areas/ecological reserves is to be established, based upon the need to protect and preserve for study special ecological- and geological-type sites that are representative of the natural diversity of Alaska's National Forests. The establishment of these sites is a part of a larger cooperative effort by several resource management agencies in Alaska to establish both undisturbed study sites (research natural areas) as well as sites reserved for use in studies that may modify the environment. While sites of both types are included in ecological reserves, research natural areas are of primary concern in Forest planning. The establishment of research natural areas therefore will be based upon discrete plant communities, geological features of scientific interest, and a limited set of animal species occurrences.

Plant communities are natural landscape components, and they represent discrete assemblages of plants that occur only where the environmental requirements of all the member species are met. Plant community classification work in Alaska has been limited; the principal accomplishment has been the development of a hierarchical system by Viereck and Dyrness. This system was published in 1980 as Forest Service General Technical Report PNW-106.

There are five levels in the Viereck and Dyrness system. For Southeast Alaska, there is sufficient information to define type needs at the lowest level (Level V) in the system. For Southcentral Alaska, there are practically no field-based studies in the literature; therefore, research natural area needs will be identified under Level IV communities, supplemented with estimates of Level V communities based upon the known ranges of plant species involved. Additional needs will be defined on the basis of the distributions and habitat preferences of selected shrub species in both Southeast and Southcentral Alaska.

Geologic features are another major element of natural diversity that will guide the selection of research natural areas. These areas are chosen for features that are of particular scientific interest, as evidenced by research activity in the past or on similar features elsewhere; the pervasive and continuing influence the feature has on the local environment; the potential the feature has for explaining or illustrating geologic forces or history; and the rarity or uniqueness of the feature.

Alaska has exceptionally diverse geologic features, especially in the south coastal portion. Nearly every type of bedrock and many landforms can be found in Southeast Alaska. Southcentral Alaska is particularly dynamic. Great earthquakes and other earth movements cause its shoreline to change, often dramatically. Southcentral Alaska is also one of the great areas of

glacial ice in the world; many types of glaciers are found there. Some kinds, especially tidewater glaciers, occur nowhere else in the National Forest System.

Animal species, because they are typically wide-ranging, are the hardest type of natural feature for which to define research natural area needs. Most often, a substantial portion of the habitat needs of the animals that occur on a research natural area are met outside its boundaries. As a result, even though there will be many animals of scientific and educational interest found on National Forest research natural areas, only a limited set of animal species occurrences will guide the selection of areas. These represent occurrences that are of particular research interest or which otherwise would be missing from the network of established areas.

There are now 22 research natural areas/ecological reserves that have been established in Alaska. Eight of these are located on the Tongass National Forest. (See Table A-1.)

Table A-1

Formally Established Units of the Alaska Ecological Reserves System

	Name of Area	Managing Agency	Location
1.	Agattu Island Research Natural Area	USFWS	Aleutian Islands
2.	Andrew Simon Research Natural Area	USFWS	Kenai Wildlife Refuge
3.	Bedlam Lake Research Natural Area	USFWS	Kenai Wildlife Refuge
4.	Bottinentnin Research Natural Area	USFWS	Kenai Wildlife Refuge
5.	Buldir Island Research Area	USFWS	Aleutian Islands
* 6.	Cape Fanshaw Research Natural Area	USFS	Stikine Area, Tongass National Forest
* 7.	Dog Island Research Natural Area	USFS	Ketchikan Area, Tongass National Forest
8.	Firth River-Mancha Creek Research Natural Area	USFS	Arctic Wildlife Refuge
9.	Halibut Cove Research Natural Area	BLM	South of Seward
* 10.	Limestone Inlet Research Natural Area	USFS	Chatham Area, Tongass National Forest
11.	Mount Glotoff Research Natural Area	USFWS	Kodiak Island
12.	Nikolai Bay Research Natural Area	USFWS	Kenai Wildlife Refuge
* 13.	Old Tom Creek Research Natural Area	USFS	Stikine Area, Tongass National Forest
* 14.	Pack Creek Research Natural Area	USFS	Admiralty Island National Monument
* 15.	Red River Research Natural Area	USFS	Misty Fiords National Monument
16.	Shublik Research Natural Area	USFWS	Arctic Wildlife Refuge
17.	Skilak Lake Research Natural Area	USFWS	Kenai Wildlife Refuge
18.	Bonanza Creek Experimental Forest	DNR-USFS	West of Fairbanks
19.	Caribou-Poker Creeks Research Watershed	DNR-BLM	East of Fairbanks
20.	Maybeso Experimental Forest	USFS	Ketchikan Area, Tongass National Forest
21.	Young Bay Experimental Forest	USFS	Admiralty Island National Monument
22.	Washington Creek Fire Ecology Research Area	BLM	North of Fairbanks

Future research natural areas will be selected through the use of the following steps in the Forest planning process:

1. Compare features on existing research natural areas (see Table A-1) with the lists of type needs to determine those needs that are already fulfilled. In some cases, this will require better information on the natural features of the existing research natural areas than is available currently. A guidebook that documents the existing research natural areas and other ecological reserves in Alaska is under preparation and will assist in this effort. Coordination and cooperation with designated research representatives is required.
2. Identify priorities among the remaining unmet type needs. Several criteria can be used to establish these priorities. If the potential effect of management on a particular type need feature is of concern, then a high priority could be established for the feature. It should be remembered that the goal is to adequately represent the feature in order to be able to conduct research and educational activities, not to preserve large amounts of land. Other criteria for setting priorities would include scientific interest, need for baseline information, and opportunity for efficiencies in travel and logistics in field work at a site.
3. Combine remaining unmet type needs into estimated area needs. Each type need will not require a separate research natural area. Well-chosen candidate research natural areas will contain several type needs. Maximizing the number of natural features within a given area adds interest because diversity is itself a condition of scientific interest.
4. Initiate the search for these area needs on the Forest Service national monuments; these national monuments were established partly for scientific and educational purposes. When appropriate, research natural areas should be sited on these monuments, since the monuments represent the most compatible land-use allocation within Alaska National Forests for this purpose. Research natural areas proposed for the monuments will be carefully selected in accordance with planned type needs and research needs in consonance with the monuments' scientific purposes.
5. If the feature or area need is unavailable in a monument, then enlarge the search to wilderness areas, wilderness study areas, or other withdrawn lands. If a research natural area is to be established in any of these designated or withdrawn areas, then it should be reasonably accessible, which generally means no more than a 2-hour hike from the nearest permitted point of vehicle (boat or aircraft, in particular) access.
6. If the feature or area need cannot be met in a monument, wilderness, wilderness study area, or other withdrawn area, then broaden the search to National Forest land-use designations that involve no programmed resource management (LUD II or equivalent).

7. If the type need remains a priority and can not be met in any of the preceding land-use designations, then broaden the search to National Forest areas of programmed resource management (LUD III's and IV's in the Tongass Land Management Plan). Attempt to accommodate the need to the greatest extent possible in portions of the management unit that are unavailable for resource development and extraction because of multiple-use and environmental quality constraints.
8. After selection of candidate areas, National Forest and Research personnel will proceed with establishment review procedures leading to the designation of research natural areas as part of the Forest planning process.

PLANT COMMUNITY TYPE NEEDS

The plant communities listed in Tables A-2 and A-3 should be represented in the final network of research natural areas on Alaska's National Forests. Although numerous, most of these plant communities will be found in association with several others at any given site, and further inventory will indicate that several are already represented in existing research natural areas. However, if it can be demonstrated that no examples of a given type are within existing research natural areas, then a search for examples of the type should be conducted.

Plant community names are given at Level V of the Viereck-Dyrness system (General Technical Report PNW-108) for Southeast Alaska. These are listed in a 4 letter code made up of the first 2 letters of the genus and the first 2 letters of the species names (modified for redundancies). Since this information is not available for Southcentral Alaska, estimates of probable types or the setting of the Level IV type is indicated. These listings are organized into higher levels of the vegetation classification system for ease of reference and interpretation.

Table A-2

Plant Community Type Needs--Southeast

Level IV Plant Community	Level V Plant Communities
FOREST	
<u>Closed Conifer Forest</u>	
Sitka Spruce	1. Pisi/Opho-Rusp/Coca
Sitka spruce-western hemlock	2. Pisi-Tshe/Lyam/Sphg
	3. Pisi-Tshe/Vaov-Vaal-Mefe
	4. Pisi-Tshe/Moun-Titr/Mnim
Western hemlock-Sitka spruce (western redcedar)	5. Tshe-Pisi-(Thpl)/Lyam/Sphg
	6. Tshe-Pisi-(Thpl)/Lyam/Sphg
Western hemlock-western redcedar	7. Tshe-Thpl/Vaov-Lyam
Mountain hemlock	8. Tsme/Vaov-Clpy
Western hemlock-mountain hemlock	9. Tshe-Tsme/Vaov-Vaal/Rupe/Rhlo
Silver fir	10. Abam-Tshe
Subalpine fir	11. Abia-Tsme
<u>Open Conifer Forest</u>	
Shore pine-western hemlock- (western redcedar-Alaska yellow-cedar)	12. Pico-Tshe-(Thpl-Chno)/Vaov-Vaal- Legr/Spsq
Sitka spruce	13. Pisi/Alsi/Caca
	14. Pisi/Alte
Mountain hemlock	15. Tsme/Casp-Vaov-Facr
<u>Conifer Woodland</u>	
Shore pine-(Alaska yellow-cedar)	16. Pico-(Chno)/Emni-Legr/Capl/Spfu
	17. Pico-(Chno)/Vaul/Trce/Spco-Spte
	18. Pico-(Chno)/Cali-Eran/Spli-Sppa
	19. Pico-(Chno)/Dran-Rhal/Spli-Spte
	20. Pico/Kapo/Eran-Capl-Tooc-Facr/ Spli-Spco
	21. Pico/Cali-Caph-Ruar-Pldi/Sppa-Spre
<u>Closed Deciduous Forest</u>	
Red alder	22. Alru
Black cottonwood	23. Poti
Aspen	24. Potr/Vied/Libo
	25. Potr/Salx/Aruv

Table A-2 (continued)

Plant Community Type Needs--Southeast

Level IV Plant Community	Level V Plant Communities
<u>Open Deciduous Forest</u>	
Aspen	26. Potr/Aruv
TUNDRA	
Crowberry	27. Emni-Cast-Phal-Vacc
	28. Emni-Capl-Cama/Clad
Ericaceous shrubs	29. Phal-Vacc-Cast-Emni
	30. Phal-Cast
	31. Phal-Cass-Vacc
	32. Came-Cast-Emni
	33. Phal-Came
Snowbed communities	34. Lupe-Phal-Cass
SHRUBLAND	
Alder	35. Alsi/Rusp
	36. Alte/Caca
HERBACEOUS	
<u>Bluejoint-Herb</u>	
Bluejoint-mixed herbs	37. Caca-Epan-Geer
	38. Caca-Epan-Hela-Ange
	39. Caca-Debe-Hela-Anlu
<u>Herbs</u>	
Mixed herbs	40. Poeg-Feru
Fireweed	41. Epan
Cow parsnip	42. Hela-Vevi-Setr
	43. Hela-Atfi-Anlu/Clsi/Caum-Cotr
Ferns	44. Atfi-Cyfr-Botr-Gydr
<u>Elymus</u>	
Coastal elymus	45. Elar

Table A-2 (continued)

Plant Community Type Needs--Southeast

Level IV Plant Community	Level V Plant Communities
Coastal elymus-herb	46. Elar-Hope-Mema 47. Elar-Seps-Lama 48. Elar-Lama-Poem 49. Elar-Lisc-Anna 50. Elar-Hela-Clsi
Dume elymus	51. Elar-Feru 52. Elar-Lama-Scps-Anlu 53. Elar-Pobo-Seps
<u>Mesic Midgrass</u>	
Hair-grass	54. Debe
<u>Wet Sedge-Grass (freshwater)</u>	
Sedge marsh	55. Caly 56. Scva 57. Cama
<u>Saline Sedge-Grass (tidal marsh)</u>	
Halophytic grass	58. Punu 59. Pugn
Halophytic sedge	60. Caly 61. Elpa
Halophytic herbs	62. Juar
<hr/> AQUATIC VEGETATION <hr/>	
<u>Ponds and Lakes</u>	
Emergent vegetation	63. Hivu
<u>Streams</u>	
Emergent Vegetation	64. Popa-Metr-Ctpa

Table A-3

Plant Community Type Needs--Southcentral

Level IV Plant Community	Estimated Level V Plant Community
FOREST	
<u>Closed Coniferous Forest</u>	
Sitka spruce	Alluvial flood plains and outer coastal fringe
Sitka spruce-western hemlock	Skunk cabbage, blueberry, and foam flower types
Western hemlock-sitka spruce	Blueberry and skunk cabbage types
Western hemlock-mountain hemlock	Low elevation type
Black spruce	Feathermoss and wild rose types
Black spruce-white spruce	Feathermoss type
White spruce	Viburnum, twinflower, and feathermoss types
White spruce-Sitka spruce hybrid	Kenai Peninsula area
<u>Open Conifer Forest</u>	
Sitka spruce-alder	Alluvial, moraine, and outwash sites
Mountain hemlock	High elevation type
White spruce	Birch shrub types
Black spruce	Cold, poorly drained sites
<u>Closed Deciduous Forest</u>	
Black cottonwood	Floodplain sites with rich soils
Balsam poplar	Floodplain sites with rich, relatively warm soils
Paper birch	Alder types especially
Aspen	Viburnum and bearberry types especially
<u>Closed Mixed Forest</u>	
Popular-spruce	Flood plain horsetail type
<u>Open Mixed Forest</u>	
Spruce-birch	Moss, alder, and lichen types

Table A-3 (continued)

Plant Community Type Needs--Southcentral

Level IV Plant Community	Estimated Level V Plant Community
<u>TUNDRA</u>	
<u>Mesic Sedge-Grass</u>	
Mesic sedge-herb meadow	Carex-geranium-lupine type
<u>Alpine Herbaceous Tundra</u>	
Alpine herbs	Luetkea and fauria types
<u>Birch and Ericaceous Shrubs</u>	
Crowberry	Cassiope, Vaccinium, and Carex types
Ericaceous shrubs	Mountain heather types especially
<u>Open Mat and Cushion</u>	
Snowbed	Luetkea type especially
Open lichen	Harsh, windblown, rocky sites
<u>SHRUBLAND</u>	
<u>Closed Tall Shrub</u>	
Willow	Feltleaf willow types especially
Alder	Sitka alder types especially
<u>Open Low Shrub</u>	
Mixed shrub-sphagnum	Sweetgale type
<u>HERBACEOUS</u>	
<u>Blue joint</u>	
Bluejoint meadow	Pure and red fescue types
<u>Blue joint-Herb</u>	
Bluejoint-fireweed	Naturally disturbed areas
Bluejoint-mixed herbs	Geranium and other types

Table A-3 (continued)

Plant Community Type Needs--Southcentral

Level IV Plant Community	Estimated Level V Plant Community
<u>Bluejoint-Shrub</u>	
Bluejoint-alder	May be a variant of type in Southwest Alaska
<u>Herbs</u>	
Fireweed	Naturally disturbed areas
<u>Elymus</u>	
Coastal elymus	Pure type
Coastal elymus-herb	Senecio and Lathyrus types especially
<u>Mesic Midgrass</u>	
Midgrass-herb	Tall and red fescue types especially
<u>Wet Sedge-Grass (fresh water)</u>	
Sedge marsh	Verification of type occurrences needed
<u>Saline Sedge-Grass (tidal marsh)</u>	
Halophytic grass	Puccinellia types
Halophytic sedge	Sheltered coastal sites
Halophytic herbs	Seaward of <u>Elymus arenarius</u> strip
AQUATIC VEGETATION	
<u>Ponds and Lakes</u>	
Floating and submerged	<u>Ranunculus</u> , <u>Potamogeton</u> , and <u>Nuphar</u> types especially
Emergent	<u>Hippuris</u> and <u>Cicuta</u> types especially
<u>Streams</u>	
Floating and submerged	Verification of type occurrences needed
Emergent	<u>Potentilla</u> type especially

SHRUB SPECIES TYPE NEEDS

Since plant community classification studies are far from complete in Alaska, shrub species have been selected that indicate additional diversity needing representation on Alaska's National Forests. The selection rationale is indicated for each species in Tables A-4 and A-5. Information on occurrence and ranges were derived from Agriculture Handbook Number 410, Alaska Trees and Shrubs.

Table A-4

Shrub Species Type Needs--Southeast

Shrubs	Selection Rationale			
	Open Habitats	Restricted to Southern Southeast	Restricted to Haines Area	Indicator Species
1. <u>Myrica gale</u> (sweet gale)	X			
2. <u>Sorbus scopulina</u> (Greene mountain-ash)	X			
3. <u>Physocarpus capitatus</u> (Pacific ninebark)	X	X		
4. <u>Crataegus douglasii</u> (black hawthorn)	X	X		
5. <u>Spirea douglasii</u> (douglas spirea)	X	X		
6. <u>Gaultheria shallon</u> (Salal)		X		X
7. <u>Lonicera involucrata</u> (bearberry honeysuckle)		X	X	
8. <u>Amelanchier florida</u> (Pacific serviceberry)		X	X	
9. <u>Alnus tenuifolia</u> (thinleaf alder)			X	
10. <u>Ribes hudsonianum</u> (northern black currant)			X	
11. <u>Shepherdia canadensis</u> (buffalo berry)			X	
12. <u>Arctostaphylos uva-ursi</u> (bearberry)			X	X

Table A-4 (continued)

Shrub Species Type Needs--Southeast

Shrubs	Selection Rationale			
	Open Habitats	Restricted to Southern Southeast	Restricted to Haines Area	Indicator Species
13. <u>Symphoricarpos albus</u> (snowberry)			X	X
14. <u>Acer glabrum</u> var. <u>douglasii</u> (Douglas maple)				X
15. <u>Ribes bracteosum</u> (stink currant)				X
16. <u>Ribes lacustre</u> (swamp gooseberry)				X
17. <u>Malus diversifolia</u> (Oregon crab apple)				X
18. <u>Rhododendron</u> <u>camtschaticum</u> (Kamchatka rhododendron)				X

Table A-5

Shrub Species Type Needs--Southcentral

Shrubs	Selection Rationale			
	Local on Rocky or Sandy Habitats	Local on Coastal Habitats	Local Species on Kenai Peninsula	Local Species on Prince William Sound
1. <u>Juniperus communis</u> (common juniper)	X			
2. <u>Juniperus horizontalis</u> (creeping juniper)	X			
3. <u>Salix hookeriana</u> (hooker willow)		X		
4. <u>Malus diversifolia</u> (Oregon crab apple)		X		
5. <u>Betula papyrifera</u> var. <u>kenaiica</u> (Kenai birch)			X	
6. <u>Amelanchier florida</u> (Pacific serviceberry)			X	
7. <u>Rubus leucodermis</u> (western black raspberry)			X	
8. <u>Crataegus douglasii</u> (black hawthorn)				X
9. <u>Cladanthamnus</u> <u>pyrolaeiflorus</u> (copperbush)			X	

GEOLOGIC·LANDFORM TYPE NEEDS

The following geologic features or landforms should be represented in the National Forest research natural areas of Alaska. Each would deserve a separate area if it were necessary, although many will be found in combination. Notes on the character of the occurrence being sought are given.

GEOLOGIC·LANDFORM TYPE NEEDS—SOUTHEAST

Hot Springs/Geothermal Features

Two kinds of hot springs should be represented. Both should contain at least some water that issues at a temperature well above 60° C, so that thermophillic bacteria are supported. Blue-green algal mats should be represented in pools or stream segments in the 35° to 60° C temperature range. One hot spring system should be in the northern portion of southeast and one in the southern portion. If possible, one hot spring system should be high in sulfur (over 200 ppm sulfate) and the other relatively low (less than 100 ppm). Both sites should have several pools or springs. At least one site should have a pool or spring that issues under pressure.

Recent Lava Flow

A typical alkali-olivine basalt flow active in historical times (unaltered by glaciation) is needed. Both ropy and smooth pahoehoe lava and blocky aa lava should be represented. If possible, a vent area with cinders should be included to illustrate plant succession (especially of trees) on finer textured material. Charred tree remains and lichen fields also should be represented.

Quaternary Volcanic Vent

A Quaternary volcanic vent modified by glacial scour and deposition should be represented. It should be quiescent and covered with vegetation, and it should illustrate physiographic maturation processes including, if possible, differential erosion rates.

Lakes

The following lake types, identified by their primary geologic factor of origin, are needed:

1. Volcanic--A lake formed by the damming effect of flowing lava. A wetland complex of submerged and emergent aquatic vegetation should be present to illustrate sedimentation and infilling at the stream inlet.
2. Ice Block Kettle Hole--A lake or lakes formed by the melting of an ice block in glacial outwash terrain. Both steep and shallow shorelines should be present. The aquatic ecosystem should be oligotrophic or mesotrophic.

3. Slump Pond--A pond or small lake formed in the headward basin of a rotational block failure on a slope.
4. "Hanging" Cirque--A lake formed by glacial scouring of bedrock in a "hanging" glacial valley. The lake should be near the contemporary tree line in order to be neither essentially sterile nor greatly modified by vegetation and high rates of weathering.
5. Tectonic-Morainial Fiord--A lake at the head of a tectonically controlled and glacially scoured fiord with a terminal moraine serving as a dam. There should be little difference (no more than 100 m) in elevation between sea level and the lake surface level.
6. Valley Morainial--A lake in a valley with a well-developed branching drainage network dammed by a glacial moraine. The lake should be at low to moderate elevations and support at least moderately productive aquatic ecosystems.

Solution Pits

Pits formed by the acid groundwater dissolution of limestone or marble bedrock. If possible, a large emerging cold spring system or an underground segment of a river or stream should be included.

Active Dune System

An active coastal dune system with open unvegetated sand, deflation plain, sandspit, baymouth bar, and, if possible, dark sands. Some areas of vegetation-stabilized sand as well as an active, wind eroding margin should be present.

Restricted Circulation Bay

A bay with a tightly constricted opening to a strait or channel of the inner marine waters of the Alexander Archipelago. The system should illustrate increased tidal amplitudes caused by the restricted flow at the bay mouth.

Reversing Salt Chuck (Marine Falls)

A salt chuck or tidally driven waterfall. It should have, at least occasionally, cascading water on both flood and ebb tides.

Coastal Staircase Benches

A well-defined series of terraces and small cliffs formed by stillstands at different relative sea levels. A long unbroken sequence or one establishing a local chronology should be represented.

Open, Wave-Beaten Coast

A rocky, outer open Pacific coastline. The shoreline should have, if possible, a variety of landforms including cliffs, headlands, offshore rocks, and a gradually sloping terrace that has undergone marine transgression.

Isostatic Rebound

A shoreline undergoing rapid uplift from the release of the weight of glacial ice. Evidence of this movement in the form of altered stream and shoreline morphology should be present. An area on the north mainland not directly associated with the rapidly fluctuating Glacier Bay system is needed.

Small Glacial System

A small glacier on the north mainland. The glacier should be as self-contained as possible; it should be at moderate elevations and not have an extensive higher elevation gathering area.

Nunataks

Ice-free land surface within a glacier-covered landscape. The nunataks of the Juneau ice field should be represented. The nunataks should have some vegetative cover; if possible, these plants should indicate something about the migration of organisms during and since the Pleistocene.

Alpine Solifluction Lobe

Undetectably slow flow of water-saturated regolith downslope over frozen ground. If possible, vegetation indicators should be present.

High-Elevation Periglacial Phenomena

Frost wedging of rock, frost heaving, ice-free permafrost if it occurs. The area should be an expanse of high-elevation land representing more than an isolated summit.

Snow Avalanche Chute

A steep track that regularly experiences snow avalanches. Vegetation indicators, especially alders, should be present. Both high-elevation and low-elevation examples are needed.

Rotational Block Failure

A downward-slipping, coherent body of soil, rock, or regolith that moves along a curved surface of rupture. A slump basin and pond should be present.

Mass Wasting/Soil Creep

An area of undetectably slow downslope movement of soil and regolith. A low-elevation example that supports tilted trees and other indicators (in contrast to the alpine solifluction feature) is needed.

Active Fault Scarp

A slippage plane undergoing rapid tectonic displacement. Altered streamcourses and other indicators should be present.

Waterfalls/Plunge Pool System

A waterfall and a plunge pool system for a major stream or small river. If possible, "potholes" ground into bedrock at the base should be present; the falls should serve as a migratory barrier to anadromous fish.

SECONDARY TYPE NEEDS, GEOLOGIC BEDROCK TYPES— SOUTHEAST

Sedimentary Rocks

limestone (with and without chert inclusions)

sandstone (quartz, arkosic, and graywacke)

shale-mudstone

conglomerate

dolomite

evaporites (rock gypsum or others)

chert (inclusions in limestone)

coal (especially lignite)

Igneous Rocks

fine grained equivalent

basalt

rhyolite

andesite

phonolite

coarse grained equivalent

gabbro

granite

diorite

nepheline syenite

Metamorphic Rocks

Rock Type:

<u>Faintly Foliated</u>	<u>Derived from:</u>
hornfels	any fine-grained rock
marble	limestone or dolomite
amphibolite	basalt or gabbro
tactite	Limestone or dolomite--with epidote if possible

<u>Well Foliated</u>	<u>Derived from:</u>
chlorite schist	andesite or basalt
amphibole schist	basalt or gabbro
gneiss	granite, rhyolite, or diorite

GEOLOGIC-LANDFORM TYPE NEEDS—SOUTHCENTRAL

Tidewater Glacier Terminus-Catastrophic Retreat

A tidewater glacier withdrawing from its terminal moraine and with the potential to undergo catastrophic retreat from iceberg calving. The glacier should be in northern Prince William Sound. The current terminus should be the focus of interest now as the process of retreat or restabilization takes place. If the retreat does take place, then this former terminus will be of particular value for monitoring succession and landscape development; other features of interest in the retreating ice mass or its margin can be identified later.

Tidewater Glacier Terminus-Stable

A steeply sloping tidewater glacier emptying into deep water with little outwash sediment accumulation. Any location around Prince William Sound would be suitable.

Piedmont Glacier Terminus and Proglacial Lake

A lowland glacier spreading out to occupy coastal terrace topography, with a meltwater lake along a portion of the ice margin. Convolute folds in the ice made visible by entrained debris should be present, or an ice-cored moraine with vegetation should be present on the surface.

Terminus of Thickening Valley Glacier

A simple valley glacier system increasing in thickness, in the Kenai Peninsula area. If possible, meltwater from the glacier, especially the flow at the base, should be discharged in a single stream outlet to allow

easy monitoring in mass balance studies. The glacier should be relatively safe to work on and near, and should have the potential for easy servicing of a long-term high-altitude climatic monitoring station.

Advancing Tidewater Glacier Terminus

A tidewater glacier that is pushing a cushion of morainal debris (subaqueous) in front of it, allowing ice advance. The system should be poised for significant, steady, long-term advance. The terminus is the focus of interest, although features along the valley or fiord margins should be included also.

Small Glacial System on the Northeast ("rain shadow") Slope of the Eastern Chugach Mountains

A complete small glacier system with limited gathering area and low elevation terminus on the relatively dry northeastern slope of the Chugach Mountains. The Cordova Peak/Meteorite Mountain block of the Chugach Mountains is the most suitable location.

Braided Glacial Outwash River Floodplain

A braided river course actively aggrading from outwash debris being carried by glacial meltwater. The river floodplain segment should be relatively short, and should feed into a stabilized river system, the open ocean, or Prince William Sound.

Glacial Valley Sideslope Scree Fan

A lowland, well-vegetated accumulation of sorted frost-churned debris (coarsest material at the base) deposited along the margin of a U-shaped glacial valley.

Frost-Churned Highlands

An area undergoing active frost wedging and sorting of stony material and debris at moderate elevations on the Kenai Peninsula. A relatively broad and level expanse of upland, with material being funnelled into a sideslope scree channel, should be included.

Sideslope Glacial Outwash Alluvial Fan

A fan-shaped alluvial deposit along the lower sideslope of a glacial valley. The fan should be at the outlet of a side drainage at the break in stream gradient. Some sorted material should be present, with the coarser material higher up and the finer textured material transported to the lower portion of the fan.

Breakwater Sandbars

Offshore shifting sandbars in the Bering River/Copper River delta region.

Small Islands and Rocks in Prince William Sound

Small islands and rocky islets illustrating coastal erosion-deposition activity on at least two contrasting bedrock types or geologic substrates.

Outer Gulf Coastline

Wave-beaten coast with a segment of rocky beach along the outer Gulf of Alaska coast at the Prince William Sound approach.

Coastal Tectonic Uplift

An area where sub- or intertidal sediment was uplifted several meters in the 1964 earthquake. The area should be above high tide and undergoing plant colonization and geomorphic change.

Lakes

The following lake types are needed:

1. Shoreline of Major Valley Morainal Lake--The shoreline of a major low-elevation valley morainal lake with a well-vegetated shoreline (primarily forest).
2. Alpine Lake--A small, glacially scoured lake basin above the tree line.

PROVISIONAL ANIMAL SPECIES TYPE NEEDS

National Forest research natural areas in Alaska should contain the animal species listed in Tables A-6 and A-7. Although revisions are to be expected in the lists of all the type need features as knowledge improves, animal species occurrences are the most incomplete. When further information about occurrence and abundance of certain animal groups (for example, songbirds) is available, then further listings might be appropriate. The general nature of the occurrence being sought is indicated.

Table A-6

Provisional Animal Species Occurrence Needs--Southeast

A. BIRDS

Bald Eagle <u>Haliaeetus leucocephalus</u>	Representative shoreline segment with active nests
Peregrine Falcon, Peale's <u>Falco peregrinus pealei</u>	Nesting and resting cliff

B. MAMMALS

Bushy-tailed Woodrat <u>Neotoma cinerea</u>	Foraging and den habitat near talus
Prince of Wales Otter <u>Lutra mira</u>	Den on a tidewater bank under an old-growth tree
Northern Sea Lion <u>Eumetopias jubata</u>	Hauling out grounds and birth site, rocky beach above tide

C. FISH

White Sturgeon <u>Acipenser transmontanus</u>	Spawning stream
Northern Pike <u>Esox lucius</u>	Disjunct occurrence in freshwater lake

D. REPTILES

Common Gartersnake <u>Thamnophis sirtalis</u>	Typical habitat--rocks or logs near marsh, ponds, or grass
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Table A-7

Provisional Animal Species Occurrence Needs--Southcentral

A. BIRDS

Trumpeter Swan <u>Olor buccinator</u>	Pond and lake breeding habitat
Dusky Canada Goose <u>Branta canadensis occidentalis</u>	Nesting and breeding habitat
Bald Eagle <u>Haliaeetus leucocephalus</u>	Typical segment of shoreline habitat with nest trees
Peregrine Falcon, Peale's <u>Falco peregrinus pealei</u>	Nesting and resting cliff

B. MAMMALS

Northern Sea Lion <u>Eumetopias jubatus</u>	Hauling out grounds and birth site, rocky beach above tide
Sea Otter <u>Enhydra lutris</u>	Storm shelter above tide; especially gravel beaches and spits

APPENDIX E

Forest Health Plan



United States
Department of
Agriculture

Forest
Service

S&PF

Reply to: 3400

Date: May 15, 1989

Subject: Draft Forest Health Implementation Plan

To: Sup. Natural Resource Planner

REPLY DUE JUNE 15

Enclosed is the draft "Forest Health Implementation Plan" for Region 10 we discussed at the leadership team meeting in January. Please review this plan and comment freely. This plan will provide direction for Forest Pest Management for the next five years.

You will note that this plan is ambitious. All the programs cannot be accomplished under current FPM staffing levels. There is a reliance on Forest Service research, Regional Office staff specialists, Alaska Department of Forestry - Pest Action Specialist, Cooperative Extension Service - Pest Scout Program, FPM Methods Application Group, and University contracts. Some of the programs are currently under way (eg. Visual Quality Study on the Kenai Peninsula is under contract with Dr. Terry Daniel, Univ. of Arizona); others are futuring exercises (eg. mill recovery study on Alaska-yellow cedar).

When all comments are in, a final plan will be developed that will include priorities, accomplishment dates, and personnel responsibilities. The final plan will be submitted to the Regional Forester and Staff for approval by mid September, 1989.

James E. Eggleston
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Caring for the Land and Serving People

FS-6200-28(7-82)

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FOREST HEALTH STRATEGIC PLAN
IMPLEMENTATION
STATE AND PRIVATE FORESTRY
ALASKA REGION

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The emphasis of Forest Pest Management, Alaska Region, will be on implementation of the Forest Health Strategic Plan. 1/ The Strategic Plan identified eight issues:

1. Planning - Integrated forest pest management considerations are not adequately incorporated in forest resource management planning processes.
2. Public Involvement - Traditional forest management practices frequently conflict with public expectations.
3. Resource Management - Certain forest management practices may aggravate forest pest problems.
4. Pest Suppression - Mechanisms are needed for prompt responses to pest outbreaks.
5. Environmental Analysis - Programmatic NEPA documents permitting timely intervention against pest outbreaks are not available.
6. Pesticides - Alternatives to environmentally unacceptable chemical pesticides are needed for integrated pest management systems.
7. Pest Control Technology - Effective and economical integrated pest management technology is needed to protect forest resources from pest damage.
8. Forest Health Monitoring - Standardized indicators for monitoring forest health are needed.

Recommended options were developed in the report for each issue. All or parts of some issues are being developed at the Washington Office. Each of the issues and recommended options will be discussed separately as they apply to the Alaska Region.

ISSUE 1 - PLANNING

RECOMMENDED OPTIONS

Develop procedures for including pest impact information in the next planning cycle.

1. Develop loss and impact information for the major insects and diseases of Alaska.
 - a. SPRUCE BEETLE
 - i) determine the impact of spruce beetle-caused tree mortality on recreation and aesthetic values.

1/ Forest Health Through Silviculture and Integrated Pest Management - A Strategic Plan. USDA Forest Service report, 26pp.

- ii) determine the impact of vegetation management to reduce spruce beetle-caused tree mortality on recreation and aesthetic values.
- iii) determine the volume and degrade of manufactured forest products (Mill Recovery Study) in interior white spruce and south-central Lutz spruce stands.
- iv) determine successional changes in stands sustaining high levels of spruce beetle-caused tree mortality.
- v) determine the impact of spruce beetle-caused tree mortality on feeding and hiding cover for moose.
- vi) determine fuels loading and risk to wildfire in stands affected by spruce beetle.

b. HEMLOCK DWARF MISTLETOE

- i) determine the infestation (% stands infected), incidence (% trees infected in infested stands), and severity rating of hemlock dwarf mistletoe in SE Alaska in old-growth and different age classes of young-growth stands.
- ii) determine the reduction in volume caused by mistletoe across a range of site and stand conditions in SE Alaska.

c. ALASKA-YELLOW CEDAR DECLINE

- i) determine the volume per acre of cedar mortality by snag class (Hennon) throughout SE Alaska.
- ii) determine volume and degrade of manufactured forest products (Mill Recovery Study) by class of snag (time since death).
- iii) determine successional changes in stands affected by cedar decline.
- iv) Add the 340,000+ acres of land permanently affected by Alaska-yellow cedar decline as a layer in GIS on the Tongass National Forest.

d. WESTERN BLACK-HEADED BUDWORM

- i) determine volume loss, top-kill, and tree mortality in managed and unmanaged hemlock stands in SE Alaska (PNW thinning study - formal agreement).

e. WOOD DECAY

- i) determine the rate of decay in trees wounded during logging activities (commercial thinning or partial cuts) to assess loss of wood volume over time - sitka spruce and hemlock in SE Alaska and white spruce in interior Alaska.

Transfer integrated pest management technology to the National Forest system and states.

1. Formal training sessions
2. Biological evaluations
3. Technical reports
4. Formal publications (Journal articles, station notes and papers, etc..)

ISSUE 2 - PUBLIC INVOLVEMENT

RECOMMENDED OPTIONS

Require a comprehensive public information effort in conjunction with forest pest management activities.

1. Develop educational materials on all major insects and diseases in Alaska.
2. Develop educational materials on vegetation management in Alaska.
3. Continue to support the pest scout program in Alaska and promote a full time program manager.
 - a. pest scouts located in Anchorage, Palmer, Fairbanks, Delta Junction, Soldotna, Juneau, and Kodiak contribute information to the public through newsletters, on-site consultations, telephone, newspaper articles, school programs and the development of pest collections for educational programs.
 - b. a full time program manager would facilitate the completion of educational collections and provide the public with a contact for IPM inquiries all year long.

Train federal, state, and county (borough) specialists in conducting public information meetings.

1. ensure that all FPM entomologists and pathologists and the state pest action person attend the "Citizen Participation Workshop".
 - a. completed - Ed Holsten, Gene Lessard, Joe Wehrman (asst state forester - resources), and Andy Eglitis

- b. scheduled (Feb 89) - Paul Hennon
- c. planned (1990) - Keith Reynolds and Dave Orr (state pest specialist)

Target high-use recreation areas for intensive integrated pest management.

1. Prepare and implement a vegetation management plan for a major campground on a National Forest. Draft vegetation management plan available for the Russian River Campground, Chugach NF.
2. Assist the state in preparation of a vegetation management plan for a major State campground.
3. Assist the state in preparation of a vegetation management plan for a major forested city or borough park.
4. Develop a tree health management plan for the Alaska Region.
5. Prepare and implement a silviculture demonstration project in a major National Forest Campground.

ISSUE 3 - RESOURCE MANAGEMENT

RECOMMENDED OPTIONS

Risk-rate all high value forest analysis areas for pest outbreak potential.

1. Develop a risk-rating scheme for the western black-headed budworm.
2. Extend the risk rating model developed for spruce beetle on the Kenai Peninsula to white spruce stands in Interior Alaska and Sitka spruce stands in Coastal Alaska.
3. Provide Chugach NF planners with spruce beetle risk rating of all high value stands in the Kenai MAA. Completed under Operation Resource Renewal (ORR).

Include integrated pest management in forest resource management prescriptions.

1. Ongoing.
2. Through the pest scout program, develop integrated pest management prescriptions on small, private wood-lots.

Identify imminent pest risks to high-value resources and reschedule management activities to minimize impacts.

1. Develop a philosophy that vegetation management is not only compatible with but, necessary to, the accomplishment of

recreation management objectives.

2. Target the Cooper Landing area for a cooperative program to demonstrate vegetation management techniques for improving forest health and reducing risk to wildfire.

Analyze the feasibility of using fuelwood sales to achieve vegetation management objectives.

1. Conduct a pilot study to determine the feasibility of using the "consessionaire program" developed in Region 2 to improve the utilization of wood products.

Determine optimum levels of forest pest management support. WO authority.

ISSUE 4 - PEST SUPPRESSION

RECOMMENDED OPTIONS

Provide training in integrated pest management for all foresters in the National Forest System.

1. Provide an opportunity for FPM personnel to participate in Regional and National Integrated Pest Management workshops and symposia.
2. Provide an opportunity for FPM personnel to participate in silvicultural certification programs.
3. Assist the state of Alaska in developing a silvicultural certification program.

ISSUE 5 - ENVIRONMENTAL ANALYSIS

RECOMMENDED OPTIONS

Prepare programmatic NEPA documentation for potentially controversial pest management activities.

1. assist the Chugach NF in preparation of a programmatic EA for spruce beetle prevention using Carbaryl.

Prepare programmatic NEPA documentation for pest management in forest nurseries and seed orchrds.

1. No needs established at this time.

ISSUE 6 - PESTICIDES

1. Currently being addressed at the Washington Office.

ISSUE 7 - PEST CONTROL TECHNOLOGY

RECOMMENDED OPTIONS

Strengthen integrated pest management technology for major forest pests.

1. Develop the use of semio-chemicals for the suppression of spruce bark beetles.
 - a. Conduct a pilot test to evaluate the effectiveness of an aerial application of formulated MCH (anti-aggregant) to suppress spruce beetle build-up in recently cleared right-of-way material on the Kenai Peninsula.
 - b. Conduct a field test of the Bait & Cut technique for suppressing spruce beetle populations in standing spruce timber.
2. Conduct experiments to evaluate the use of herbicides, mechanical scarification, and fire in controlling competing vegetation in coastal sitka spruce and interior white spruce regeneration.

Improve the development of technology to solve operational problems.

1. Conduct a pilot test to evaluate the efficacy of Carbaryl treated standing green spruce as a lethal trap.

Improve the program to transfer integrated pest management technology.

1. Formalize the Cooperative Pest Scout Program and create, and fund a full-time coordinator position.
2. Seek increased participation from the State of Alaska Forest Pest Action Program.

ISSUE 8 - FOREST HEALTH MONITORING

1. Currently being addressed at the Washington Office.

APPENDIX F

Stream Value Tables

APPENDIX F - Alaska Dept. of Fish and Game stream number (Dist = District; Sub-D. = subdistrict), Watershed Name, Commercial and Sport Fish Value Ratings, and VCU within which

the watershed is located. Note that some watersheds and streams are located in more than one

VCU, but only the VCU closest to saltwater is shown in this table. Values for the S tikine

and Ketchikan Administrative Areas of the Tongass National Forest are not yet available; only

the Chatham Area, the northern part of the Forest, are included in this appendix.

Dist.	Sub-D.	Stream	Watershed Name	Comm Fish	Sport Fish
VCU					
115	20	10,100	Berners River	5	5
12					
115	20	10,200	Lace River	5	4
13					
115	20	10,300	Antler River	4	4
16					
115	20	10,520	Sawmill Cr., Berners Bay	4	4
17					
115	20	10,620	Cowee Cr	4	5
25					
111	50	10,100	Peterson Cr	4	4
27					
111	50	10,420	Auke Lake	5	5
27					
111	50	10,500	Montana Cr	4	5
27					
111	50	10,500	Mendenhall R. & tributary	5	5
27					
111	50	10,070	Herbert R & Windfall Lake	4	4
26					
111	40	10,070	Switzer Cr	4	3
32					
111	40	10,150	Salmon Cr	0	5
32					
111	40	10,280	Sheep Cr	3	3
32					
111	50	10,690	Fish Cr	5	5
34					
111	40	10,700	Hilda Cr	0	4
36					
111	32	10,800	Turner Cr	3	5
43					
111	32	10,320	Taku R & trib.	5	5
41					
111	32	10,320	Sockeye Cr	4	3
46					
111	32	10,320	Moose Lake	3	5
46					
111	32	10,320	Fish Cr	3	3
46					
111	32	10,990	Slocum Inlet	5	3
51					
111	90	10,050	Limestone Inlet	4	4
53					
111	33	10,100	Prospect Cr	4	3
55					

Dist.	Sub-D.	Stream	Watershed Name	Comm Fish	Sport Fish
VCU					
112	65	10,140	Hawk Inlet, W. head	3	3
128					
112	65	10,150	Hawk Inlet, E. head	3	3
128					
111	50	10,800	Bear Cr	4	4
129					
111	41	10,180	Fowler Cr	4	3
131					
111	41	10,050	Admiralty Cr	5	5
133					
0	0	0	Youngs Lake	4	5
133					
111	17	10,280	Upper Seymour Cr	3	3
142					
111	17	10,100	King Salmon R	5	5
143					
112	65	10,240	Greens Cr	5	3
144					
112	65	10,280	Piledriver Cr	3	3
146					
112	16	10,300	Wheeler Cr	5	4
146					
112	17	10,120	Kathleen Cr	5	5
148					
112	17	10,160	Ward Cr	3	3
149					
112	17	10,250	Florence Cr	5	5
150					
111	15	10,200	Windfall Cr	5	5
151					
111	15	10,280	Windfall Harbor, N.W. side	4	3
151					
111	15	10,300	Pack Cr	4	3
152					
111	16	10,350	Swan Cove, N.W. side	not rated	0
152					
111	16	10,450	Big Cr & Swan Cove	not rated	4
152					
111	13	10,100	Mole Harbor Cr.	5	4
156					
112	67	10,350	Hasselborg R & Lake	5	5
157					
112	17	10,300	Fishery Cr	5	4
158					
112	17	10,500	Thayer Cr	5	5
161					
112	67	10,800	Favorite Bay Cr	4	3
165					
112	67	10,600	Kanalku Cr	5	5
166					
112	67	10,400	Jim Lake & Cr	4	5
167					
111	12	10,050	Pleasant Bay	5	5
168					
110	23	10,080	Johnson Cr (Gambier Bay)	5	5
170					
110	23	10,100	Bowman Cr	5	5

Dist.	Sub-D.	Stream	Watershed Name	Comm Fish	Sport Fish
VCU					
114	33	10,230	Neka R	5	4
193	32	10,060	Bear Cr, Midway Rocks	3	3
203	32	10,040	Seagull Cr	4	3
203	31	10,130	Game Cr	5	4
204	31	10,090	Gartina Cr	4	4
205	27	10,300	Spasski Cr	5	4
207	27	10,150	Suntaheen Cr	4	5
209	13	10,060	Iyouktug Cr	4	3
210	50	10,300	Freshwater Cr	5	4
215	50	10,250	Kennel Cr	5	3
217	50	10,100	Pavlof R	5	5
218	42	10,080	Indian R - Tenakee	5	5
220	48	10,350	Tenakee Inlet, head	4	3
224	48	10,230	West Bay Head Cr	5	3
225	48	10,150	Big Goose Cr	4	4
226	48	10,190	Little Goose Cr	3	3
226	47	10,100	Long Bay	4	4
228	46	10,070	Seal Bay, W. head	5	4
229	46	10,080	Seal Bay, E. head	3	4
229	45	10,360	Seal Bay, W. of entrance	3	3
230	44	10,100	Saltery Bay	5	4
231	43	10,100	Crab Bay, NW head	4	3
232	43	10,020	Crab Bay	4	4
233	42	10,320	Rudy Cr	4	3
234	42	10,250	Kadashan R	5	5
235	42	10,160	Corner Bay	4	4
236	41	10,100	Trap Bay E.	3	4
237	12	10,250	Kook Cr	5	5
239	12	10,050	Whiterock Cr	4	4

Dist.	Sub-D.	Stream	Watershed Name	Comm Fish	Sport Fish
VCU					
113	73	10,120	No Name - Slocum Arm	3	3
270					
113	72	10,010	Chichagof Cr	4	3
271					
113	72	10,020	Klag Bay (Fish Camp Cr)	5	5
271					
113	72	10,030	Lake Anna	4	4
271					
113	72	10,040	Rust Cr 10040-2019	4	3
271					
113	72	10,040	Sister Lake (head of N. Arm) 10040-2025	4	3
271					
113	72	10,040	Sister Lake, S.E. end 10040-2028	4	3
271					
113	81	10,100	Black Bay Cr	0	3
272					
113	81	10,110	Black R	5	5
272					
113	73	10,020	Ford Arm E.	4	3
274					
113	72	10,030	Ford Arm	5	4
274					
113	72	10,040	Ford Arm S.	4	3
274					
113	73	10,080	Flat Cove	4	3
275					
113	73	10,100	Slocum Arm	3	3
275					
113	62	10,010	Salisbury	4	4
277					
113	63	10,020	Suloia Lake & outlet	0	5
278					
113	55	10,110	Poison Cove Cr	4	3
279					
113	64	10,010	Deep Bay	5	4
280					
113	56	10,020	Ushk Bay S.W. end	4	3
281					
113	56	10,030	Ushk Bay W. end	5	4
281					
113	56	10,040	Ushk Bay N. end	3	3
281					
113	57	10,010	Fick Cove	5	4
282					
113	57	10,020	Between Fick Cove & Patterson Bay	3	3
282					
113	57	10,040	Patterson Bay SW head	4	3
283					
113	57	10,050	Patterson Bay N. head	5	4
283					
113	57	10,080	Hoonah Sound, S. Arm, S. head	3	3
284					
113	58	10,040	Granite Cr	5	4
284					
113	57	10,090	Hoonah Sound, S. Arm head	4	3
284					
113	58	10,020	Hoonah Sound, N. Arm	4	3

Dist.	Sub-D.	Stream	Watershed Name	Comm Fish	Sport Fish
VCU					
113	66	10,060	St. Johns Bay	0	3
302					
113	62	10,060	Sukoi Inlet	4	4
303					
113	62	10,080	Sinitzin Cove Cr	4	3
304					
113	62	10,090	Kalinin Bay	4	3
305					
113	62	10,100	Suprise Lake & outlet	0	4
305					
113	45	10,060	Shelikof Bay	4	3
307					
113	62	10,050	Krestof Sound	5	4
308					
113	41	10,120	Lava Falls Cr	0	5
309					
113	41	10,110	Port Krestof Cr	3	5
309					
113	41	10,150	Starrigavan Cr	4	5
311					
113	41	10,190	Indian R - Sitka	4	5
311					
113	44	10,050	S. Katlian Cr	5	5
312					
113	44	10,030	Katlian R	5	5
313					
112	21	10,050	Clear R	5	4
314					
113	41	10,210	Sawmill Cr	3	5
318					
113	41	10,340	Camp Coogan	3	3
319					
113	41	10,350	Aleutkina Cr	4	3
320					
113	41	10,420	Kizhuchia Cr	5	3
321					
113	41	10,320	Salmon Cr	5	5
323					
112	11	10,050	Baranof R	4	5
326					
109	20	10,220	Nelson Bay	4	4
328					
109	20	10,180	Wakefield Lakes	3	4
329					
109	20	10,130	Falls Lake	3	4
330					
109	20	10,070	Gut Bay	4	5
332					
109	10	10,280	Parry Lake	4	4
333					
109	10	10,230	Deep Cove N. Arm	4	3
334					
109	10	10,185	Deer Lake	5	5
335					
109	10	10,165	Port Herbert	4	4
336					
109	10	10,090	Sashin Cr	5	4

Dist.	Sub-D.	Stream	Watershed Name	Comm Fish	Sport Fish
VCU					
182	70	12,000	Ahrnklin R	5	5
371					
182	70	11,400	Seal Cr, Middle Fork	4	3
371					
182	70	11,200	Seal Cr, W. Fork	4	3
371					
182	60	10,100	Dangerous R	4	3
377					
182	50	10,200	Italio R, E. Fk 3010	5	5
378					
182	50	10,400	Italio Drainage 2009	4	3
379					
182	50	10,300	Italio Drainage 2005	3	4
379					
182	50	10,100	Italio R	5	5
378					
182	40	11,200	Ustay East 2018	5	5
381					
182	40	10,600	Square Lake (Ustay R) 2018-3009-0010	5	5
381					
182	40	10,100	Akwe R	5	5
381					
182	30	10,100	Alsek R	5	5
395					
182	20	10,100	East Alsek R	5	5
396					
182	10	10,100	Doame R	4	5
396					

APPENDIX G

Electronic Sites

APPENDIX G - EXISTING AND APPROVED ELECTRONIC SITES

The table below provides a listing of both existing, and unconstructed but previously approved, electronic sites on the Tongass National Forest. These sites are used for electronic communication systems, including electronic transmitters, receivers, and resource monitoring equipment. An electronic site is a parcel of land on which buildings, antenna towers, and other electronic equipment designed for communication are located. These uses are authorized by the Federal Land Policy and Management Act of 1976 (FLPMA, 43 U.S.C. 1761) (FSM 2720).

This list is an update of a previous listing found in Appendix E of the 1985-86 Amendment to the Tongass Land Management Plan (USDA Forest Service, 1985-86, Alaska Region Admin. Doc. Number 147). Errors in the previous listing have been corrected, changes incorporated, and new sites added which were existing but omitted from the earlier listing or have been previously analyzed and approved in a separate site-specific analysis. The list in Table ___ designates these sites for future additional joint use and occupancy as per Forest Service Manual 2720. Site modifications require prior approval of the site plan by the Forest Supervisor or Regional Forester (FSM 2720).

EXISTING AND APPROVED ELECTRONIC SITES

Area and District	Site Name	Site Location	Site Size	Permittee or Owner	Elevation (in feet)
STIKINE AREA:					
Petersburg R.D.	Lindenber	NE4, Sec. 23, T59S, R79E, CRM	1 ac.	Forest Service	3,249
Petersburg R.D.	Farrigut	NE4, Sec. 8, T55S, R78E, CRM	1 ac.	Forest Service	3,810
Petersburg R.D.	Fanshaw	SE4, Sec. 10, T54S, R75E, CRM	2 ac.	Coast Guard, FAA	2,100
Petersburg R.D.	Kake	NW4, Sec. 33, T56S, R74E, CRM	.01 ac.	Forest Service	600
Petersburg R.D.	Level	Section 28, T62S, R79E, CRM	120 ac.	FAA	25
Petersburg R.D.	Kuiu	Section 5, T61S, R73E, CRM	2 ac.	FAA, Icicle Seafoods	3,325
Petersburg R.D.	Duncan	Section 17, T59S, R78E, CRM	2 ac.	Alascom, Coast Guard	2,606
Petersburg R.D.	Petersburg	SW4, Sec. 21, T58S, R79E, CRM	1 ac.	Alascom	1,600
Petersburg R.D.	Kuiu	NW4, Sec. 9, T61S, R73E, CRM	1 ac.	Forest Service	3,355
Petersburg R.D.	Horn	NW4, Sec. 14, T58S, R80E, CRM	1 ac.	Alascom	2,880
Wrangell R.D.	Elbow	NW4, Sec. 3, T60S, R86E, CRM	1 ac.	Forest Service	4,246
Wrangell R.D.	Etolin	SW4, Sec. 17, T66S, R83E, CRM	1 ac.	Forest Service	3,051
Wrangell R.D.	Fools	SW4, Sec. 21, T65S, R87E, CRM	1 ac.	Forest Service	3,143
Wrangell R.D.	Zarembo	SW4, Sec. 1, T64S, R80E, CRM	2 ac.	Forest Service, Coast Guard	2,444
Wrangell R.D.	Kashevarof	NW4, Sec. 13, T65S, R80E, CRM	1 ac.	Alascom	500
Wrangell R.D.	Navy Peak	SW4, Sec. 11, T67S, R84E, CRM	2 ac.	Alaska Power Authority	3,665

APPENDIX G
EXISTING AND APPROVED ELECTRONIC SITES (CONTINUED)

Area and District	Site Name	Site Location	Site Size	Permittee or Owner	Elevation (in feet)
CHATHAM AREA:					
Juneau R.D.	Bessie Mt.	SW4, Sec. 16, T38S, R64E, CRM	1 ac.	Alascom	2,850
Juneau R.D.	Auke Mt. #1	NW4NE4, Sec. 20, T40S, R65E, CRM	1 ac.	Forest Service	1,870
Juneau R.D.	Beezar Mt.	SE4, Sec. 13, T49S, R74E, CRM	1 ac.	Forest Service	4,100
Juneau R.D.	William Henry Peak	SE4SW4, Sec. 17, T36S, R61E, CRM	1 ac.	Forest Service	3,458
Juneau R.D.	Point Howard	E2, Sec. 3, T41S, R63E, CRM	1 ac.	Alascom	1,800
Juneau R.D.	Mt. Robert Barron	SE4, Sec. 18, T42S, R65E, CRM	1 ac.	Forest Service, Coast Guard, FAA,	3,475
Alaska State Troopers					
Juneau R.D.	Heintzleman Ridge	SW4, Sec. 29, T40S, R66E, CRM	1 ac.	KJUD, KSUP	1,400
Juneau R.D.	Saddle Mt.	SE4, Sec. 19, T41S, R66E, CRM	1 ac.	Alaska State Troopers	3,068
Juneau R.D.	Williams Mt.	SW4, Sec. 7, T40S, R66E, CRM	1 ac.	FAA	3,336
Yakutat R.D.	Russell Fiord	NW4NE4, Sec. 3, T24S, R34E, CRM	1 ac.	Park Service	3,950
Yakutat R.D.	Russell Fiord	Section 7, T26S, R35E, CRM	1 ac.	Forest Service	2,505
Yakutat R.D.	Akwe River	SW4SW4, Sec. 9, T30S, R39E, CRM	5 ac.	FAA, Forest Service	1,200
Admiralty N.M.	Randolph Peak	NE4SW4, Sec. 14, T46S, R70E, CRM	1 ac.	Snettisham	3,000
Admiralty N.M.	Wheeler Creek	NW4, Sec. 28, T44S, R65E, CRM	1 ac.	Alascom	25
Admiralty N.M.	Windfall Harbor	SW4NW4, Sec. 34, T47S, R69E, CRM	1 ac.	Forest Service	2,900
Admiralty N.M.	Angoon Admin. Site	SW4, Sec. 31, T50S, R68E, CRM	1 ac.	Alascom	100
Hoonah R.D.	Pelican	SE4SE4, Sec. 26, T44S, R55E, CRM	1 ac.	Alascom	2,171
Hoonah R.D.	Mt. Adolphua	SW4NW4, Sec. 32, T41S, R59E, CRM	1 ac.	Alascom	1,670
Hoonah R.D.	Neka Mt.	SW4NW4NW4, Sec. 33, T43S, R59E, CRM	1 ac.	Forest Service	3,139
Hoonah R.D.	Seal Mt.	NE4, Sec. 11, T45S, R63E, CRM	5 ac	Forest Service	3,250
Hoonah R.D.	Siaters Island	E2NW4, Sec. 3, T43S, R62E, CRM	42 ac.	FAA	30
Sitka R.D.	Moore Mt.	NW4NE4, Sec. 31, T49S, R64E, CRM	1 ac.	Alaska Pulp Corporation	3,075
Sitka R.D.	Steelhead	NW4SE4, Sec. 13, T47S, R59E, CRM	1 ac.	Forest Service	2,339
Sitka R.D.	South Passage	57° 44' 48"N, 134° 58' 4"W	5 ac.	Alascom	2,031
Sitka R.D.	Rodman Bay	57° 22' 55"N, 135° 18' 45"W	2 ac.	Alascom	3,000
Sitka R.D.	Upper Krusof	SE4NW4, Sec. 18, T53S, R61E, CRM	1 ac.	Forest Service	2,300
Sitka R.D.	Mud Bay	SE4SW4, Sec. 25, T54S, R61E, CRM	1 ac.	Alascom, Forest Service	1,055
Sitka R.D.	Manley Mt.	57° 06' 55"N, 134° 18' 30"W	5 ac.	Alascom	2,215
Sitka R.D.	Mt. Furuheim Area	SW4SW4, Sec. 18, T56S, R66E, CRM	1 ac.	Forest Service	5,280
Sitka R.D.	Biorka Island	57° 51'N, 135° 33'W	151 ac.	FAA	100
Sitka R.D.	Sukoi	SW4, Sec. 9, T53S, R61E, CRM	1 ac.	FAA	1,900

EXISTING AND APPROVED ELECTRONIC SITES (CONTINUED)

Area and District	Site Name	Site Location	Site Size	Permittee or Owner	Elevation (in feet)
KETCHIKAN AREA:					
Thorne Bay R.D.	Cape Pole	NE4SE4NW4, Sec. 22, T68S, R75E, CRM	.04 ac.	Alascom	10
Thorne Bay R.D.	Ratz Mt.	SE4, Sec. 26, T69S, R82E, CRM	.01 ac.	Alascom	1,955
Thorne Bay R.D.	Ratz Mt.	SW4SE4, Sec. 26, T69S, R82E, CRM	.005 ac.	South Coast	3,161
Thorne Bay R.D.	Coffman	SE4, Sec. 35, T67S, R81E, CRM	.156 ac.	Alascom	30
Thorne Bay R.D.	Coffman	SE4, Sec. 25, T67S, R81E, CRM	.156 ac.	Sitka Telephone	30
Thorne Bay R.D.	Ratz Mt.	SE4, Sec. 26, T69S, R82E, CRM	1 ac.	Alaska Aviation,	3,156
				Alaska Loggers	
Thorne Bay R.D.	Thorne Bay	NW4NW4, Sec. 27, T71S, R84E, CRM	.45 ac.	Alascom	87
Thorne Bay R.D.	Tolstoi II	Section 16, T72S, R85E, CRM	1 ac.	Alascom	2,210
Craig R.D.	1/2 Mile	SW4NW4, Sec. 6, T73S, R82E, CRM	1 ac.	Alascom	2,166
Craig R.D.	Hill 1400	Section 31, T75S, R82E, CRM	1.25 ac.	Alascom	1,398.5
Ketchikan R.D.	Bell Island	SE4, Sec. 11, T68S, R98E, CRM	.5 ac.	Rediscovery Lodge	2,000
Ketchikan R.D.	Black Mt.	NW4, Sec. 14, T75S, R92E, CRM	.25 ac.	Rainbird Broadcasting	2,058
Ketchikan R.D.	Betton Head	SE4, Sec. 25, T73S, R89E, CRM	.46 ac.	Rainbird Broadcasting	1,138
Ketchikan R.D.	High Mt. (Gravina)	SW4, Sec. 18, T75S, R90E, CRM	.01 ac.	Rainbird Broadcasting,	2,500
				Alaska Aviation, KPU	
				Pond Reef Fire Dept.	
Ketchikan R.D.	Mt. Dolly	NE4, Sec. 18, T68S, R100E, CRM	.5 ac.	Scotties Gold Mine	5,475
Misty Fiords N.M.	Quartz Hill	SE4, Sec. 3, T75S, R98E, CRM	.1 ac.	U.S. Borax	3,800
Misty Fiords N.M.	High Mt.	NE4, Sec. 20, T80S, R97E, CRM	100 ft.	Alascom	1,976
			x 200 ft.		

Source: Tongass Land Management Plan, Amended Winter 1985-86, Appendix E. Updated by Administrative Areas and Districts (1989).

APPENDIX H

Non-Recreation Special Uses

APPENDIX H - NON-RECREATION SPECIAL USES

The number of non-recreation special use authorizations on the Tongass National Forest in FY 89, by type and management area, are listed below. Data is from the Forest Land Use Report (FLUR).

<u>Use Code</u>	<u>Type of Use</u>	<u>SA</u>	<u>CA</u>	<u>KA</u>	<u>TNF</u>
Agricultural Uses					
211	cultivation		2		2
216	fish hatchery	3	3	1	7
223	agriculture residence	1	6		7
Subtotal		4	11	1	16
Community and Public Information					
311	special event		1		1
322	church		1		1
331	marker			1	1
340	sanitary systems		1		1
342	liquid waste disposal area			1	1
344	hazardous and toxic waste disposal sites			1	1
350	community residences			4	4
351	residence, privately-owned building	1	1	1	3
361	schools		1	2	3
362	service building			2	2
364	shelter		1		1
370	encroachments			1	1
Subtotal		1	6	13	20
Feasibility, Research, Training, Cultural Resources, and Historical Uses					
411	site surveys and testing		1	1	2
412	resource surveys	1	2		3
420	research	1			1
421	experimental and demonstration	6	6	3	15
422	research studies		13		13
425	observatories	1	1	1	3
432	education center		2		2
442	nondisturbing uses		4		4
443	disturbing uses			1	1
Subtotal		9	29	6	44

Industrial Uses

510	camps	10	104	12	126
511	construction camps and residences		3	3	6
520	storage	1	1		2
521	warehouse and storage yard	5	2	3	10
522	stockpile site		1		1
530	manufacturing		1		1
531	processing plant			7	7
541	weighing or scaling stations	2			2
551	commercial photography		1		1
552	motion picture and television location		4		4
561	geological and geophysical exploration	1		6	7
562	mineral material sales	4	15		19
593	log landing	1			1
Subtotal		24	132	31	187

Use Code	Type of Use	SA	CA	KA	TNF
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Energy Generation and Transmission

611	hydroelectric project, FERC licensed		1	1	2
612	hydroelectric project, FERC exempted		1		1
631	oil and gas pipelines		1		1
641	powerline, REA financed		5		5
643	powerline	2	3	2	7
Subtotal		2	11	3	16

Transportation

700	transportation			3	3
714	airport or airway beacon			1	1
715	helicopter landing site		2	1	3
721	mooring point		7	4	11
722	boat dock, wharf, pier			5	5
724	navigation aid, lighthouse		6		14
740	road easements, perpetual			3	3
741	FRTA easement, cost-shared road		3		3
742	FRTA easement, noncost-shared road	22	3		25
743	FRTA forest road easement		2		2
744	FRTA priv. road ease., inter. Fed. aid			1	1
745	Dept. of Transportation easement	1			1
750	road or trail authorizations	1		2	3
754	FLPMA forest road permit	4	8	9	21
755	FLPMA private road permit	1	6	5	12
758	trail		1	1	2
761	slurry pipeline			1	1
Subtotal		37	38	36	111

Communications

812	elec. site, transmit/receive single user	3	5	18	26
813	elec. site, transmit/receive multi. user	9	13		22
814	resource monitoring site			1	1
821	telephone and telegraph lines		5	2	7
822	telephone lines, REA financed			2	2
831	other communication improvements	2			2
832	other commun. improve., REA financed	<u>1</u>	<u>23</u>	<u>23</u>	<u>1</u>
Subtotal		15			61

Non-power Generating Water Facilities

900	water (non-power generating)	1		1	2
910	water transmission			2	2
911	irrigation water ditch (dirt-lined)	1		1	2
912	irrig. water trans. pipe, 12" diam. or more			1	1
913	irrig. water trans. pipe, less 12" diam.		1	1	2
914	water trans. pipe, 12" diameter or more	1	1	1	3
915	water trans. pipe, less than 12" diam.	3	21	2	26
920	impoundment			1	1
922	dam, reservoir	1	1	1	3
923	water diversion, weir	1		7	8
934	fish ladder	<u>1</u>	<u>1</u>	<u>18</u>	<u>2</u>
Subtotal		9	25		52

Grand Total		101	275	131	507
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APPENDIX I

State and Native Land Selections

REGION 10
TOTAL STATE SELECTIONS STATISTICS BY AREAS
as of October 1, 1989

Area	Total Acreage Applied for to Date	Acreage Approved by FS	Acreage Disapproved	Acreage Relinquished	Total Acreage Conveyed	Acres Approved but Relinquish.	Valid Selection under Application
CHATHAM	115,311.216	102,488.706	7,990.51	15,155.167	54,942.77	3,475.0 +	46,671.025 +
STIKINE	72,173.36	60,555.36	2,592.00	3,183.0	34,748.06	310.0 +	26,474.41 +
KETCHIKAN	<u>130,082.23</u>	<u>102,238.54</u>	<u>7,850.14</u>	<u>8,094.52</u>	<u>64,332.42</u>	<u>3,835.0</u>	<u>44,160.03 +</u>
TOTAL TONGASS NF	317,566.806	265,282.606	18,432.65	26,432.687	154,023.25	7,620.0 +	117,305.465 +
CHUGACH NF	<u>211,731.15</u>	<u>153,256.35</u>	<u>22,755.39</u>	<u>19,408.3</u>	<u>67,713.11</u>	<u>2,303.0</u>	<u>117,204.100 +</u>
STATE SELECTIONS							
TOTAL ALL AREAS	529,297.956	418,538.956	41,188.04	45,840.987	221,736.36	9,923.0 +	234,510.465 +

Total Acreage Applied for to Date: Acres of National Forest Lands the State of Alaska has applied for as its entitlement under the Statehood Act.

Acreage Approved by FS: Acres the State has applied for and the Forest Service has agreed meet the criteria for that type selection, as well as being 'best use' of those land areas.

Acreage Disapproved: Selected areas that the Forest Service disapproved - determined that the requested lands did not meet some or all of the criteria for the intended use/purpose.

Acreage Relinquished: Lands previously selected by the State, for which the State has withdrawn it's request.

Total Acreage Conveyed: Sum of all the land area (acres) conveyed through Tentative Approvals or Patents to the State of Alaska.

Acres Approved but Relinquished: State land selections that the Forest Service had approved for conveyance, for which the State has now withdrawn their application.

Valid Selections under Application: Those acres which the State has applied for, the Forest Service has approved, but are still awaiting adjudication and/or conveyance by the Bureau of Land Management.

PROGRESS REPORT ON STATE SELECTIONS OF NATIONAL FOREST LANDS
as of October 1, 1989

CHATHAM AREA	Date Applied	Acreage Applied for	Acreage Approved By FS	Acreage Disapproved by FS	Date Conveyed	Tentative Approval or Patent No.	Total Acreage Conveyed	Remarks
Auke Cape/Lena Cove Backland AA-	06/30/89	700	700					NFCG-316
Baranof Warm Springs Amended AA-6040 *	02/15/83	895	895					Partial relinquishment b State (880 acres) 2/8/85
Amended AA-053101 *	02/08/85	840	840					
	08/19/88	50	50					
Betty Lake AA-18073	12/19/77	416		416				Relinquished by State 08/19/87
Big Bear/Baby Bear - Baranof Island AA-	06/30/89	1,023	1,023					NFCG-307
Biorka Island amended AA-??	02/15/83 10/19/87	594 553						Partial relinquishment b State (553)
Bridget Cove (Berners Bay) Amended AA-6075	12/19/77	6,876.79	6,876.79		06/29/78 12/30/82 06/29/83		5248	Partial relinquishment (100 acres)
rejected in part Combined AA-18008 and AA-6075 - 11/19/82 Disallowed Sec. 11, T. 37 S., R. R. 63 E.				05/03/83				
Addition	02/05/81	430	80		07/05/63		60.	
Camp Coogan/Aleutkina Bay AA-53100	02/15/83	2,035	2,035					State relinquish selection 2/8/85
Cape Bingham AA-18077	12/19/77	1,112	1,112		02/29/84	TA	1,150	

PROGRESS REPORT ON STATE SELECTIONS OF NATIONAL FOREST LANDS
as of October 1, 1989

Chatham Area	Date Applied	Acreage Applied for	Acreage Approved By FS	Acreage Disapproved by FS	Date Conveyed	Tentative Approval or Patent No.	Total Acreage Conveyed	Remarks
Chaichei Islands AA-53105	02/15/83	45	45					NFCG-217
Chaik Bay AA-18081	12/19/77	388		388				Relinquished by State 08/19/87
Chilkat Island AA-18066	12/19/77	540	540		12/01/81	TA	488	
Coghlan and Portland Islands AA-	06/30/89	270	270					NFCG-319
Deep Cove AA-18074	12/19/77	495		495				Relinquished by State 08/19/87
Douglas (Eaglecrest) Addition AA-18003	12/19/77 02/05/81	3,880 400	3,880 400		09/29/82 10/20/83	TA TA	3,833 40	
Eaglecrest Addition - Douglas Island AA-	06/30/89	400	400					NFCG-314
Elevenmile Creek - Douglas Island AA-	06/30/89	300	300					NFCG-315
Elfin Cove AA-18021	12/19/77	7	7					
Elfin Cove AA-	06/30/89	36.8	36.8					NFCG-310
Excursion Inlet, Lower AA-18026	12/19/77	2,379.33	2,379.33		10/08/85 04/29/82 12-09-81 06-17-80 (Rescinded)	50-86-0020 TA	2,396	

PROGRESS REPORT ON STATE SELECTIONS OF NATIONAL FOREST LANDS
as of October 1, 1989

CHATHAM AREA	Date Applied	Acreage Applied for	Acreage Approved By FS	Acreage Disapproved by FS	Date Conveyed	Tentative Approval or Patent No.	Total Acreage Conveyed	Remarks
Excursion Inlet, Upper AA-18025	12/19/77	295.18	295.18		10/01/85 02/06/85 06/17/80	50-86-0002 TA	304.21	
Funter Bay Amended AA-6474	12/19/77	162.511	162.511		06/17/80 09/08/80	TA 50-80-0143	162	Relinquished 3,021.657 acres
Funter Bay - Admiralty Island AA-	06/30/89	508	508					NFCG-313
Gambier Bay AA-18080	12/19/77	857		857				Relinquished by State 08/19/87
Gavanski Islands AA-53106	02/15/83	230	230		02/28/86	TA	230	
Goddard Hot Springs AA-18014	12/19/77	3,694.41	3,694.41		09/29/82 05/30/85 06/26/85	TA 50-85-0464	3,616	
Goulding Harbor AA-18078	12/19/77	862		862				Relinquished by State 08/19/87
Green Lake (Sitka) AA-14261	04/24/77	5,693	5,693		07/31/78	TA	5,705	
Halibut Point Addition AA-53103	02/15/83	1	1					NFCG-220
Hobart Bay AA-18062	12/19/77	95		95				Relinquished by State 08/19/87

PROGRESS REPORT ON STATE SELECTIONS OF NATIONAL FOREST LANDS
as of October 1, 1989

CHATHAM AREA	Date Applied	Acreage Applied for	Acreage Approved By FS	Acreage Disapproved by FS	Date Conveyed	Tentative Approval or Patent No.	Total Acreage Conveyed	Remarks
Hoonah, Game Point AA-18023	12/19/77	1,056.32	1,056.32					Conveyed to Sealaska Corpora
Game Point Addition AA-53107	02/15/83	15	15					NFCG-213
Horse Island Amended AA-53552	02/15/83 03/07/84	180	180		05/30/85 05/23/89	TA 50-89-0303	202.12	NFCG-252
Idaho Inlet AA-???	07/02/85 08/ /86	1,065 370						
Indian River (Sitka) AA-53102	02/15/83	985	985		02/09/89	TA	991.0	NFCG-221
Indian River Additions- Sitka AA-	06/30/89	440	440					NFCG-302
Juneau: Mendenhall AA-348	10/20/65	380	300		11/29/67 07/15/82	TA	407.64	
Fish Creek AA-347	10/20/65	980	980		11/29/67 07/28/82	TA 50-82-0091	965.09	
Lemon Creek AA-349	05/23/66	1,560	1,560		06/01/67 11/28/67	TA	1,886.01	
Addition	03/07/84	17	17		08/30/82 02/04/86	50-82-0122 50-86-0111	17.22	
Juneau Channel Islands AA-	06/30/89	3,117	3,117					NFCG-321
Kalinin Bay AA-18068	12/19/77	831	831					

PROGRESS REPORT ON STATE SELECTIONS OF NATIONAL FOREST LANDS
as of October 1, 1989

CHATHAM AREA	Date Applied	Acreage Applied for	Acreage Approved By FS	Acreage Disapproved by FS	Date Conveyed	Tentative Approval or Patent No.	Total Acreage Conveyed	Remarks
Kasnyku Bay AA-18071	12/19/77	297		297				Relinquished by State (03/25/88)
Katzehin River - Lynn Canal AA-	06/30/89	615	615					NFCG-324
Kennel Creek AA-63724	02/15/83	800			02/09/89	TA	495.0	
Lake Anna A-18079	12/19/77	545		545				Relinquished by State 08/19/87
Lake Dorothy AA-	06/30/89	4,350	4,350					NFCG-312
Lisianski Peninsula/ Katlian Bay - Baranof Island AA-	06/30/89	3,760	3,760					NFCG-304
Lisianski Peninsula/ Nakwasina Sound - Baranof Island AA-	06/30/89	650	650					NFCG-305
Lynn Sisters AA-	06/30/89	1,430	1,430					NFCG-323
Magoun Islands - Krestof Sound AA-	06/30/89	1,135	1,135					NFCG-306
Middle Island Group AA-53104	02/15/83	1,335	1,335		09/23/85	TA	1,335	
Montana Creek AA-18007	12/19/77	1,988	1,988		12/09/83 09/19/85	TA 50-85-0587	1,995	

PROGRESS REPORT ON STATE SELECTIONS OF NATIONAL FOREST LANDS
as of October 1, 1989

CHATHAM AREA	Date Applied	Acreage Applied for	Acreage Approved By FS	Acreage Disapproved by FS	Date Conveyed	Tentative Approval or Patent No.	Total Acreage Conveyed	Remarks
Oliver Inlet AA-18084	12/19/77	365	365		09/29/82	TA	365	
Pavlov Harbor AA-18076	12/19/77	543	543					
Pelican AA-18022	12/19/77	1,950.98	1,950.98		01/18/85 08/25/80 04/15/86 03/22/85	TA 50-86-0164 50-85-0267	1,908.79	
Pleasant Bay AA-18082	12/19/77	530		530				Relinquished by State 08/19/87
Port Alexander Amended AA-18020	08/18/78	393.27	393.27		05/17/84 08/23/85	TA 50-85-0530	531	
Pybus Bay AA-18085	12/19/77	886.41		886.41				Relinquished by State 08/19/87
Red Bluff Bay AA-18072	12/19/77	1,088		1,088				Relinquished by State 08/19/87
St. James Bay AA-18027	12/19/77	3,683	3,683		11/06/81	TA	3,700	
Schulze Cove AA-??	02/15/83	925						
Shamrock Bay AA-18075	12/19/77	515		515				Relinquished by State 08/19/87

CHATHAM AREA	Date Applied	Acreage Applied for	Acreage		Date Conveyed	Tentative		Remarks
			Approved By FS	Disapproved by FS		Approval or Patent No.	Total Acreage Conveyed	
Shelter Island Addition AA-	06/30/89	3,573	3,573					NFCG-320
Shelter Is. South	12/19/77	488.79	488.79					
Shelter Island AA-18002	12/19/77	888.74	888.74		12/17/80 07/05/89	TA 50-89-0383	(1,405) 1,410.55	Relinquished 5 acres
Sitka - Amended Tract A&C (Katlian Bay) (Starrigavan area) AA-2311	03/07/67	1,658	1,658		09/16/77	TA	1,522.07	
Snettisham AA-	06/30/89	2,666	2,666					NFCG-311
South Gastineau Amended AA-18006	12/19/77	788	788					
SW Douglas Island AA-???	12/19/77	5,516	5,516		08/19/80	TA	788	
Southwest Douglas Island Addition AA-	06/30/89	320	320					NFCG-318
Spuhn Island AA-53108	02/15/83	55	55		07/06/89	TA	55.0	NFCG-211
Starrigavan Campground AA-18015	02/15/83	115						State relinquish selection 9/24/8
Starrigavan Valley AA-18015	12/19/77	455	455					Partial relinquishment b State 9/25/84, balance

PROGRESS REPORT ON STATE SELECTIONS OF NATIONAL FOREST LANDS
as of October 1, 1989

CHATHAM AREA	Date Applied	Acreage Applied for	Acreage Approved By FS	Acreage Disapproved by FS	Date Conveyed	Tentative Approval or Patent No.	Total Acreage Conveyed	Remarks
Sullivan Island AA-18067	12/19/77	639	639		03/27/84	TA	600	
Sumdum AA-18063	12/19/77	440.10		440.10				Relinquished by State 08/19/87
Swanson Harbor AA-18028	12/19/77	1,095	1,095					
Swanson Harbor Addition Lynn Canal AA-	06/30/89	3,224	3,224					NFCG-322
Takatatz Lake AA-40277	07/03/80	2,385	2,385		03/27/84	TA	1,723	
Taku Harbor, Amended AA-18005	12/19/77	624.52	624.52		10/22/80 08/22/80	TA	701	
Taku River AA-18001	12/19/77	2,610.005	2,610.005		02/23/82	TA	1,995	
Tenakee Amended AA-15077	08/16/77	4,369.57	4,369.57		05/29/80 09/24/82 07/13/89	TA 50-82-0143 50-89-0402	3,876.40 244.83	
Tenakee - Goose Flats AA-	06/30/89	1,192	1,192					NFCG-309
Tenakee/Frederick Portage AA-	06/30/89	640	640					NFCG-308

PROGRESS REPORT ON STATE SELECTIONS OF NATIONAL FOREST LANDS
as of October 1, 1989

CHATHAM AREA	Date Applied	Acreage Applied for	Acreage Approved By FS	Acreage Disapproved by FS	Date Conveyed	Tentative Approval or Patent No.	Total Acreage Conveyed	Remarks
Upper Starrigavan Valley - Sitka AA-	06/30/89	685	685					NFCG-303
USS 2306, Lot 2 AA-50389	06/08/83	13.49	13.49		05/10/89	50-89-0276	13.49	
USS 2385, Mendenhall Back Loop Road AA-47428	12/23/81	10	10		09-29-83	TA	24	
William Henry Bay AA-53109	02/15/83	328	328					NFCG-210
Windfall Harbor AA-18083	12/19/77	576		576				Relinquished by State 08/19/87
Yakutat AA-558	03/03/66	3,998	4,020		02/29/68 12/18/70 06/21/83 02/07/84 07/02/85	TA 50-83-0207 50-84-0162 50-85-0477	3,958.35	
Yakutat Airport Addition 2-15-83 AA-53110		111	111					NFCG-209

PROGRESS REPORT ON STATE SELECTIONS OF NATIONAL FOREST LANDS
as of October 1, 1989

STIKINE AREA	Date Applied	Acreage Applied for	Acreage Approved By FS	Acreage Disapproved by FS	Date Conveyed	Tentative Approval or Patent No.	Total Acreage Conveyed	Remarks
Blind Slough (Petersburg) AA-6150	12/17/70	190	190		08/16/71 09/05/73	TA 50-74-0025	152.48	
Bradfield Canal AA-	06/30/89	4,090	4,090					NFCG-288
Cape Fanshaw/ Whitney Island AA-63733	07/02/85	2,207			08/25/89 08/25/89	50-89-0547 TA	33.35 1,822.0	NFCG-253
Coho Creek AA-18013	12/19/77	3,515	3,515		06/29/83 10/17/85	TA 50-86-0032	3,515.32	
Crystal Lake AA-	06/30/89	610	610					NFCG-293
East Ravens Roost - Petersburg AA-	06/30/89	1,580	1,580					NFCG-297
Eastern Passage 1, Zimovia Strait Amended AA-18016	12/19/77	(10,833) 10,953	(10,833) 10,953		04/28/82	TA	9,910	
Eastern Passage - Wrangell Island AA-	06/30/89	3,565	3,565					NFCG-287
Explorers Basin AA-18065	12/19/77	2,350		2,350				Relinquished by State 08/19/87
Falls Creek - Mitkof Island AA-	06/30/89	640						NFCG-295

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Fools Inlet AA-???	02/15/83	560						Relinquished by State 08/19/87
Frederick Point AA-18012	12/19/77	2,921	2,921		08/11/80 07/20/82	TA 50-82-0086	2,904.26	
Hamilton Island - Kake AA-	06/30/89	380	380					NFCG-300
High Island AA-18070	12/19/77	607	607		08/12/83	TA	605	
Ideal Cove - Mitkof Island AA-	06/30/89	910	910					NFCG-292
Kake AA-61015	03/04/87	204			06/12/89	TA	240.0	NFCG-254
Kupreanof - East Lindenbergen Peninsula AA-	06/30/89	600	600					NFCG-298
LeConte Bay AA-18061	12/19/77	242		242				Relinquished by State 08/19/87
McHenry Anchorage AA-18058	12/19/77	805	805					
No Name Bay - Kuiu Island AA-	06/30/89	3,300	3,300					NFCG-299
North Mitkof Addition AA-53099	02/15/83	800	800					NFCG-225

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Olive Cove AA-18017	12/19/77	514.13	514.13		11/04/81 08/21/89	TA 50-89-0538	(524) 535.04	
Petersburg Reservoir Mitkof Island AA-	06/30/89	400		400				NFCG-296
Petersburg Rock Pit AA-18011	12/19/77	160	160		08/11/80	TA	160	
Petersburg Target Range Big Gulch (Mitkof Island) AA-	06/30/89	80	80					NFCG-294
Petersburg-Wrangell Narrows AA-18009	12/19/77	4,723	4,723		05/11/81 04/28/82 07/29/82	TA TA (Modified) 50-82-0093	4,787	
Read Island AA-18060	12/19/77	705	705		09/30/82	TA	670	
Rowan Bay AA-63726 Amended	02/15/83 11/21/86	(595) 665						Partial relinquishment & addition 11/21/86
St. John Harbor AA-63727	02/15/83	1,390						
Security Bay AA-18064	12/19/77	515	515		01/31/84	TA	500	
Sitkum Creek - Kake AA-	06/30/89	1,400	1,400					NFCG-301

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South Mitkof Island AA-18010	12/19/77	4,015	4,015		08/07/84	TA	3,835	Relinquished 5 acres
Sunny Bay/Deer Island AA-???	02/15/83	1,195						
Thomas Bay AA-18024	12/19/77	2,280	2,280		08/11/80	TA	2,215	Relinquished 20 acres
Thoms Creek - Wrangell Island AA-	06/30/89	2,480	2,480					NFCG-286
Thoms Place AA-18019	12/19/77	2,527.23	2,527.23		01/18/85 01/29/81 08/21/89	TA 50-89-0538	(2,450) (1) 2,438.69	Relinquished 6 acres
Thoms Place Addition - Wrangell Island AA-	06/30/89	1,770	1,770					NFCG-285
Thoms Lake AA-18018	12/19/77	2,520	2,520		07/14/82 08/21/89	TA 50-89-0538	(2,520) 2,179.04	
Tyee Lake AA-	06/30/89	980	980					NFCG-289
West Wrangell Narrows - Kupreanof Island AA-	06/30/89	660	660					NFCG-291
Woodpecker Cove - Mitkof Island AA-	06/30/89	2,165						NFCG-290

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Alava Bay AA-18056	12/19/77	631		631				Relinquished by State 08/19/87
Black Bear Lake AA-	06/30/89	337	337					NFCG-357
Blank Inlet AA-18034	12/19/77	8,429	8,429		09/29/83	TA	7,658	Partial relinquishment b State 06/30/86 - 955 acres
Burroughs Bay AA-18069	12/19/77	326		326				Relinquished by State 08/19/87
Cape Pole AA-???	02/15/83	946	860	86				Relinquished by State 09/12/85
Carroll Point AA-18037	12/19/77	1,085.49	1,085.49					Partial relinquishment b State 06/30/86 - 690 acres
Coffman Cove AA-53098	02/15/83	3,930	3,910	20	01/23/87 02/24/86	TA	3,839	NFCG-345
Coffman Cove Addition AA-	06/30/89	2,200	2,200					
Control Lake AA-???	02/15/83	280						
Control Lake Addition AA-	06/30/89	730	730					NFCG-352
Dall Head AA-18031	12/19/77	850.22	850.22					

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Dunbar Inlet AA-	06/30/89	610	610					NFCG-373
Edna Bay AA-18029	12/19/77	7,043	6,023.37	1,019.63	09/25/84 02/26/82 01/04/85	TA 50-85-0012	5,960.98	Relinquished 0.52 acres
Edna Bay Addition AA-53547	02/15/83	160	160					NFCG-232
El Capitan Island AA-	06/30/89	865	865					NFCG-342
El Capitan Passage/ Twin Island Lake AA-	06/30/89	2,104	2,104					NFCG-341
Exchange Cove AA-	06/30/89	504	504					NFCG-338
Exchange Road AA-	06/30/89	380	380					NFCG-343
First Waterfall Creek AA-18041	12/19/77	990	990					
Foggy Bay AA-18059	12/19/77	1,006		1,006				Relinquished by State 08/19/87
Goose Creek AA-	06/30/89	1,195	1,195					NFCG-354
Grant Island AA-???	02/15/83	135	135					NFCG-241

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Grindall Island AA-18052	12/19/77	515	515					
Grindall Passage AA-	06/30/89	400	400					NFCG-361
Harris River Road AA-???	02/15/83	320						
Haceta Island AA-	06/30/89	3,523	3,523					NFCG-350
Herring Cove AA-18038	12/19/77	755	755		06/14/84 03/13/85	TA 50-85-0221	831	
Hole-in-the Wall	06/30/89	675	675					NFCG-339
Hollis AA-18047	12/19/77	4,339.47	3,799.47	540	05/13/80 10/03/85 11/14/88	TA 50-86-0005 50-89-0051	3,852.59 238.26	
Hollis Community Center AA-	06/30/89	140	140					NFCG-358
Hollis Addition AA-53093	02/15/83	160	160					NFCG-243
Hook Arm AA-	06/30/89	1,027						NFCG-370
Hyder AA-18030	12/19/77	932	927.2	4.8	05/18/84	TA	835	
Hyder Addition AA-53097	02/15/83	290	290					State relinquish selection 06/30/

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Hyder - Fish Creek AA-	06/30/89	160						NFCG-284
Ingraham Bay AA-	06/30/89	1,345						NFCG-365
Jinhi Bay AA-	06/30/89	893	893					NFCG-346
Judd Harbor/Kelp Island AA-	06/30/89	2,170						NFCG-279
Kaigani Harbor AA-???	02/15/83	620						
Kasaan Bay AA-	06/30/89	970	970					NFCG-362
Kendrick Bay AA- Amended	02/15/83 05/07/87	585						
Kendrick Bay Addition AA-	06/30/89	360	360					NFCG-367
Ketchikan #1 AA-177 Amended	03/11/66	4,139.26	4,017	122.26	04/05/68 08/21/68 07/28/72 01/15/82	TA 50-69-0074 50-73-0014 50-82-0034	4,139.26 (340.46) (part of TA'd ac) 2,930.61 843.77	
Ketchikan #2 AA-3431	06/25/68	60	60		05/13/69 05/21/69	TA 50-69-0194	60	
Kitkun Bay AA-???	02/15/83	2,435						

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Klawock Airport AA-53096	02/15/83	574	574					NFCG-239
Lake Harriet Hunt AA-18042	12/19/77	400	400					
Mabel Bay AA-	06/30/89	1,350						NFCG-372
Manzanita Bay AA-18036	12/19/77	384		384				
Menefee Anchorage AA-	06/30/89	570	570					NFCG-364
Merrifield Bay AA-	06/30/89	420	420					NFCG-340
Mountain Point AA-18039	07/31/78	654	654		08/04/80 09/13/89	TA 50-89-0686	(654) 662.89	NFCG-139
Naukati Bay AA-53986	02/15/83	3,165	2,854	311	04/10/85	TA	3,107	
Naukati East AA-	06/30/89	555	555					NFCG-348
Neets Creek AA-18055	12/19/77	350		350				Relinquished by State 08/19/87
Niblack Anchorage AA-18050	12/19/77	982		982				Relinquished by State 03/25/88
North Edna Bay AA-	06/30/89	480	480					NFCG-349

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North Hollis Addition AA-	06/30/89	515	515					NFCG-359
North Naukati Addition AA-	06/30/89	1,837	1,837					NFCG-347
North Thorne Bay AA-	06/30/89	2,040	2,040					NFCG-353
North Thorne Bay Odd Lot AA-	06/30/89	1,805	1,805					NFCG-355
Port Dolores AA-	06/30/89	1,205						NFCG-369
Port Protection AA-18045	12/19/77	1,260.62	1,260.62		06/17/80 09/14/81	TA 50-81-0170	1,240	
Port Protection Addition AA-	06/30/89	35	35					NFCG-375
Port Refugio AA-???	02/15/83	919						
Port Stewart AA-18057	12/19/77	310		310				Relinquished by State 08/19/87
Salmon Bay AA-18051	12/19/77	192	192					
Salt Lake Bay AA-	06/30/89	917	917					NFCG-351

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Saltery Cove AA-???	02/15/83	880						
Saltery Cove Addition AA-	06/30/89	350	350					NFCG-363
Settlers Cove AA-18032	12/19/77	275	275		03/15/83	TA	238	
Shrimp Bay AA-18054	12/19/77	860		860				Relinquished by State 08/19/87
Silvis Lakes Revillagigedo Island AA-	06/30/89	775	775					NFCG-280
Spacious Bay (Cleveland Peninsula) AA-	06/30/89	3,365						NFCG-283
Soda Bay AA-	06/30/89	1,100	1,100					NFCG-371
So. Arm Chomondeley AA-18053	12/19/77	568		568				Relinquished by State 03/25/88
South Betton Island AA-???	02/15/83	280	280					NFCG-240
South Arm Moira AA-	06/30/89	855						NFCG-366
South Thorne Bay Odd Lot AA-	06/30/89	1,133	1,133					NFCG-356

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Swan Lake (Revillagigedo Island) AA-	06/30/89	600	600					NFCG-281
Talbot Lake AA-53091	02/15/83	400	400					NFCG-246
Thorne Bay AA-18049	12/19/77	6,789.11	6,749.66	39.45	01/21/86 06/14/85 01/27/81 08/22/80	50-86-0108 50-85-0436 modified '80 TA	350.90 6,430.78 +4,000	
Thorne Bay Addition Revision AA-53987	02/15/83 03/07/84	4,520	4,465	55				NFCG-238
Traitors Cove AA-18044	12/19/77	362	347	15	08/21/80	TA	335	
Trocadero Bay AA-	06/30/89	2,761	2,761					NFCG-368
Twin Island Road AA-	06/30/89	160	160					NFCG-344
Upper George Inlet AA-18043	12/19/77	7,524	7,524		03/14/83 06/25/85	TA	7,730	
Upper Lake Harriet Hunt AA-59999	07/02-85	600	600					NFCG-251 Partia relinquishment b State - 10/09/86 560 acres
USS 1079 (near KTN. AA-58523 Admin. Site)	04/23/86				05/10/89 05/10/89	TA 50-89-0279	1.62 0.66	
Vallenar Bay AA-18033	12/19/77	3,801	3,801		04/08/82	TA	3,541	

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Virgin Bay (Revillagigedo Island) AA-	06/30/89	440	440					NFCG-282
Vixen Harbor AA-??	02/15/83	1,314						
Ward Cove AA-53092	02/15/83	460	300	160	01/06/89	TA	325.0	NFCG-245
Waterfall AA-18046	12/19/77	1,530.71	1,530.71		08/11/80	TA	1,540	
West Hollis Addition AA-	06/30/89	500	500					NFCG-360
Whale Passage AA-18048	12/19/80	2,348	2,288	60	10/17/80 01/31/89	TA 50-89-0135	(2,075) 2,189.99	
Whale Pass Addition Amended AA-53548	02/15/83 05/06/85	905	905					NFCG-229
Whipple AA-18035	12/19/77	1,641	1,641		06/01/84	TA	1,460	
Whipple Creek Addition AA-18035	12/19/77 10/16/89	5.35 30.0		5.35				
White River Loop AA-18040	12/19/77	480	480					Relinquished State 06/30/

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Anderson Bay Addition#1 AA-	06/30/89	1,654	1,654					NFCG-327
Avery River AA-	06/30/89	354	354					NFCG-332
Bear Valley AA-	06/30/89	320						NFCG-264
Bettles Bay AA-17618	12/19/77	450	450		05/29/80	TA	444	
Bettles Island AA-???	02/15/83	290						NFCG-196
Billings Cove AA-	06/30/89	1,885	1,885					NFCG-325
Bishop's Ridge Addition AA-	06/30/89	320	320					NFCG-266
Boswell Bay AA-17605	12/19/77	2,622.04	2,622.04					
Cannery Creek AA-17625	12/19/77	600		600				Relinquished by State 03/25/88
Canoe Passage AA-17603	12/19/77	4,190	4,190					
Cape Yakataga/ Suckling Hills Unit AA-???	02/15/83	4,435						NFCG-208
Carmen Lake AA-17589	12/19/77	3,022		3,022				Relinquished by State 08/19/87

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Carter Lake Addition AA-57976	02/15/83	160	160					NFCG-192
Cascade Creek AA-17628	12/19/77	495		495				Relinquished by State 03/25/88
Constantine Harbor AA-17600	12/19/77	2,462.5		2,462.5				Relinquished by State 03/25/88
Cooper Landing AA-2601	01/04/68	2,376.11	2,376.11		09/07/78	50-78-0103	57.99	
	01/04/78	14.7	14.7		05/05/78	TA	2,376.11	
					11/14/79	TA	14.7	
					03/26/86	50-86-0130	5.31	
					01/27/84	50-84-0131	1,837.55	
Cooper Landing AA-17584	12/19/77	7,228.19	7,005.10	223.09	11/15/83	TA	4,085	
					07/25/83	TA	1,756	
Cooper Landing West, Additional Selection AA-17584	05/05/67	3,000	3,000					
Cordova AA-067458	12/04/64	6,519	6,020	499	07/25/72	TA	5,792	
					02/06/76	50-76-0107		
Cordova Airport AA-53112	02/15/83	98	98					NFCG-206
Crow Pass A AA-	06/30/89	9,242						NFCG-257
Crow Pass C AA-	06/30/89	3,260						NFCG-258
Disk Island AA-17610	12/19/77	625		625				Relinquished by State 03/25/88

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Drier Bay AA-17621	12/19/77	1,405		1,405				Relinquished by State 03/25/88
Eagle Bay AA-17607	12/19/77	1,231		1,231				Relinquished 144 acres
Entry Cove AA-17617	12/19/77	370	370		09-29-83	AA-17617	550	
Ester Bay AA-	06/30/89	2,101	2,101					NFCG-329
Falls Lake AA-17627	12/19/77	360		360				Relinquished by State 03/25/88
Flagg Point AA-	06/30/89	248	248					NFCG-328
Girdwood - Glacier Creek/Winner Creek AA-	06/30/89	4,586	4,586					NFCG-259
Grandview AA-	06/30/89	640						NFCG-265
Granite Bay AA-	06/30/89	2,384	2,384					NFCG-330
Goat Harbor AA-17611	12/19/77	255		255				Relinquished by State 03/25/88
Golden Creek AA-17629	12/19/77	435	435					
Granite Cove AA-17620	12/19/77	790		790				Relinquished by State 03/25/88

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Grant Lake Addition AA-53115	02/15/83	210	210					NFCG-200
Hartney Bay AA-17592	12/19/77	3,972.45	3,972.45					
Hawkins Island AA-17594	12/19/77	1,115.5	1,115.5		11/17/88	50-88-0057	839.36	
Hope AA-17586	04/07/65	316	316		01/26/67 07/27/72 01/10/73	50-67-0379 50-73-0009 50-73-0116	310.51	
Hope Additions A AA-	06/30/89	384	384					NFCG-271
Hope Additions C AA-	06/30/89	265	265					NFCG-270
Hope Highway Junction AA-	06/30/89	2,400	2,400					NFCG-269
Hope, Porcupine Creek, Amended AA-17586	07/31/78	502.56	502.56		10/04/85 10/09/85	TA 50-86-0026	445.99 (2.99)	(part of TA'd a
Hummer Bay/Pirate Cove AA-	02/15/83	325						
Ingram Creek AA-	06/30/89	2,038	2,038					NFCG-261
Juneau Addition								

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Juneau Creek/ Bean Creek AA-	06/30/89	1,270	1,270					NFCG-275
Katalla AA-17596	12/19/77	1,035	1,035					
Katalla Townsite Addition AA-53111	02/15/83	490	490					NFCG-207
Kayak Island AA-17597	12/19/77	1,437	1,437					
Kayak Island Addition#1 AA-	06/30/89	1,149	1,149					NFCG-337
Kenai Lake AA-12409	05/05/77	4.25	4.25		05/04/83 06/21/83	TA 50-83-0210	3.69	
Kenai Lake/Snug Harbor Road AA-57977	02/15/83	1,040	1,040					NFCG-191
Kenai Lake/Snug Harbor Road Addition AA-	06/30/89	3,980	3,980					NFCG-277
Kenai Peninsula Ingram Creek Amended AA-57977 Amended	12/19/77 04/03/86 03/03/87	80 440		440				Partial relinquishment State (80 acres 03/03/87
LaTouche AA-17601	12/19/77	1,159	1,159		07/18/85	TA	320	Relinquished 900 acres

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as of October 1, 1989

CHUGACH NF	Date Applied	Acreage Applied for	Acreage Approved By FS	Acreage Disapproved by FS	Date Conveyed	Tentative Approval or Patent No.	Total Acreage Conveyed	Remarks
Logging Camp Bay Amended AA-55795	02/15/83 02/06/85	460	460		12/11/85	TA	467	
Long Bay, Lake Shrode AA-17614	12/19/77	2,220		2,220				
Lower Summit Lake Amended	02/15/83 03/22/85	968						NFCG-195
Main River AA-17626	12/19/77	285		285				Relinquished by State 03/25/88
Manitoba Mountain/ Saxton AA-	06/30/89	3,400	3,400					NFCG-272
Marsha Bay AA-17630	12/19/77	545		545				Relinquished by State 03/25/88
Moose Pass AA-5572	05/29/67 12/19/77	733 10,870.87	733 10,465.46		07/26/73 01/04/85 11/15/83	TA TA	692.56 7,866	Relinquished 224 acres
AA-17583 closed as of 09/16/83 & combined w/ AA-5572								
Mount Alyeska (Girdwood) AA-	06/30/89	2,535	2,535					NFCG-260
Mt. Eccles AA-17595	12/19/77	2,480		2,480				
North Airport (Cordova) AA-17591	12/19/77	5,148		5,148				

PROGRESS REPORT ON STATE SELECTIONS OF NATIONAL FOREST LANDS
as of October 1, 1989

CHUGACH NF	Date Applied	Acreage Applied for	Acreage Approved By FS	Acreage Disapproved by FS	Date Conveyed	Tentative Approval or Patent No.	Total Acreage Conveyed	Remarks
NW Airport (Cordova) AA-??	12/19/77	150	150					
Outside Bay AA-17609	12/19/77	825		825				Relinquished by State 03/25/88
Perry Island Amended AA-17623	12/19/77 10/29/85			735				NFCG-91
Perry Island Addition AA-??	02/15/83	2,263						
Pigot Bay AA-17612	12/19/77	295	295		09/20/82	TA	422	
Pirate Cove AA-	06/30/89	905	905					NFCG-331
Poe Bay AA-55794 Amended	02/15/83 02/06/85	547	547		12/11/85	TA	420	
Poe Bay Addition #1 AA-	06/30/89	840	840					NFCG-326
Poe Bay East AA-	06/30/89	363	363					NFCG-374
Point Gravina AA-17598	12/19/77	2,678.15	2,678.15					
Point Gravina Addition AA-53113	02/15/83	1,700	1,700					NFCG-205
Point Shepard AA-17593	12/19/77	205	205					

PROGRESS REPORT ON STATE SELECTIONS OF NATIONAL FOREST LANDS
as of October 1, 1989

CHUGACH NF	Date Applied	Acreage Applied for	Acreage Approved By FS	Acreage Disapproved by FS	Date Conveyed	Tentative Approval or Patent No.	Total Acreage Conveyed	Remarks
Port Chalmers AA-17622	12/19/77	1,190		1,190				
Port Etches AA-17599	12/19/77	1,334	1,334					
Port Fidalgo AA-17624	12/19/77	1,305		1,305				Relinquished by State 03/25/88
Port Nellie Juan AA-17632	12/19/77	375		375				Relinquished by State 03/25/88
Princeton Creek AA-17631	12/19/77	890		890				Relinquished by State 03/25/88
Quartz Creek AA-57975	02/15/84	440	440					NFCG-193
Quartz Creek Addition AA-	06/30/89	960	960					NFCG-274
Resurrection River AA-58537	02/15/83	1,159	1,159					NFCG-190 Relinquished in its entirety (03/08/89)
Rocky Creek AA-	06/30/89	191	191					NFCG-278
Sawmill Bay AA-17615	12/19/77	1,425	1,425					NFCG-83 Partial relinquishment (120 acres) 04/07/88

PROGRESS REPORT ON STATE SELECTIONS OF NATIONAL FOREST LANDS
as of October 1, 1989

CHUGACH NF	Date Applied	Acreage Applied for	Acreage Approved By FS	Acreage Disapproved by FS	Date Conveyed	Tentative Approval or Patent No.	Total Acreage Conveyed	Remarks
Seattle Creek B AA-	06/30/89	1,520	1,520					NFCG-262
Seattle Creek C AA-	06/30/89	8,015	8,015					NFCG-263
Seward AA-17582	12/19/77	8,251.13	8,251.13		11/26/85 11/26/85	TA 50-86-0072	2,632	
Schilter Creek Addition AA-	06/30/89	1,230	1,230					NFCG-276
Shoestring Cove AA-17606	12/19/77	1,280		1,280				Relinquished by State 03/25/88
Shotgun Cove Addition AA-	06/30/89	514	514					NFCG-333
Siwash Bay AA-17616	12/19/77	2,350	2,350					
South Airport (Cordova) AA-17591	12/19/77	205	205					
So. Elrington Island AA-17608	12/19/77	1,137.8		1,137.8				Relinquished by State 03/25/88
So. Esther Island AA-17619	12/19/77	2,465	2,465		09/02/81 10/28/86	TA 50-87-0030	2,370.04	
South Esther Island Addition #1 AA-	06/30/89	2,135	2,135					NFCG-336

PROGRESS REPORT ON STATE SELECTIONS OF NATIONAL FOREST LANDS
as of October 1, 1989

CHUGACH NF	Date Applied	Acreage Applied for	Acreage Approved By FS	Acreage Disapproved by FS	Date Conveyed	Tentative Approval or Patent No.	Total Acreage Conveyed	Remarks
South Esther Island Addition #2 AA-	06/30/89	1,115	1,115					NFCG-334
South Fork Snow River AA-???	02/15/83	2,760						NFCG-198
So. Woodrow Addition AA-53114	02/15/83	530	530					NFCG-189 Relinquished 1 acre
South Summit Lake AA-57968	02/15/83	240	240					NFCG-194
Southwest Latouche Is. AA-???	02/15/83	40						NFCG-197
Summit Lake/ Colorado Creek AA-	06/30/89	880	880					NFCG-273
Sunrise AA-17585	12/19/77	2,139	2,139		05/17/84 05/18/88	TA TA	1,986 185.0	
Surprise Cove AA-17613	12/19/77	1,380	1,380		10/05/82 03/21/84	TA	1,582	
Surprise Cove Addition AA-	06/30/89	1,426	1,426					NFCG-335
Trail Lakes Addition A AA-	06/30/89	560	560					NFCG-267
Trail Lakes Addition C AA-	06/30/89	1,264	1,264					NFCG-268

PROGRESS REPORT ON STATE SELECTIONS OF NATIONAL FOREST LANDS
as of October 1, 1989

CHUGACH NF	Date Applied	Acreage Applied for	Acreage Approved By FS	Acreage Disapproved by FS	Date Conveyed	Tentative Approval or Patent No.	Total Acreage Conveyed	Remarks
Tonki Bay AA-17604	12/19/77	4,108	4,108					
Valdez (TAPS) AA-???	11/04/69	802	802		11/04/77	50-78-0006	762.90	
Valdez-Anderson Bay - Jack Bay AA-17590	12/19/77 12/19/77	2,247.9 2,687	2,247.9 2,687		05/29/80	TA	5,782	
West Snow River AA-???	02/15/83	958						NFCG-199
Windy Bay - (Cedar Bay) AA-17602	12/19/77	2,520	2,520					NFCG-70 Partial relinquishment (acres) 04/07/88
Whittier-Shotgun Cove Amended AA-17588	05/22/74 06/25/75 12/19/77 05/30/85 03/27/87	7,754	5,864		02/26/85 09/02/88	TA TA	2,117 840	Partial relinquishment b State 5/30/85 & 3/27/87 (118 acres) NFCG-56
????? A-056986					05/22/89	50-89-0305	20,750.40	

REGION 10
NATIVE LAND SELECTIONS STATISTICS
as of December 1, 1989

Corporation	ANCSA * Entitlement	Total NF Acreage Conveyed	Remaining ANCSA Entitlement
TONGASS NATIONAL FOREST			
SEALASKA CORPORATION	267,249.86+ **	238,240.157	29,009.703
Cape Fox	23,040	19,815.045	3,224.955
Goldbelt, Inc.	23,040	30,735.81	0
Haida Corporation	23,040	20,850.16	2,294.06
Huna Totem Corporation	23,040	22,909.34	130.66
Kake Tribal Corporation	23,040	22,502.39	537.61
Kavilco, Inc.	23,040	23,066.885	0
Klawock-Heenya	23,040	22,331.029	708.971
Klukwan, Inc.	23,040	22,907.486	132.514
Kootznوو, Inc.	29,150	23,980.0	5,170.0
Shaan Seet, Inc.	23,040	23,292.72	0
Shee Atika, Inc.	23,040	26,296.23	0
Yak-Tat Kwaan, Inc.	23,040	21,837.10	1,202.90
	549,839.86	518,764.352	42,307.153

* Entitlements described in Sections 14 and 16 of ANCSA (does NOT include additional entitlements provided for in ANILCA or other subsequent Federal legislation, except for figures shown for Kootznوو, Inc.). Conveyance figures do include acres conveyed under the authority of ANILCA.

** From Section 14(h)(8) - figures approximate: entitlement will vary depending upon selection of 14(h)(1), 14(h)(2), 14(h)(3) and 14(h)(5) sites.

NATIVE SELECTIONS CONVEYED
as of December 1, 1989

Corporation	Entitlement	Date Conveyed	Patent or Interim Conveyance	Acreage Conveyed	Total Acreage Conveyed
<u>TONGASS NF</u>					
Sealaska (AA-14015)	267,249.86	08/22/88	IC 1400	9.0	
		10/09/87	IC 1361	12,581	
		09/30/86	IC 1267	1	
		09/12/86	IC 1237	10	
		07/14/86	IC 1183	24,233	
		08/22/83	IC 695	1,200	
		05/16/83	IC 640	1,120	
		11/16/82	IC 571	1,260	
		09/30/81	IC 431	2,600	
		04/25/80	IC 312	35,745	
		12/13/79	IC 276	12	
		10/31/79	IC 247	205	
		10/31/79	50-80-0005	1,080.987	
		08/17/79	IC 225	158,154	
		08/17/79	50-79-0135	29.17	

Conveyances which include both surface and subsurface estate

NATIVE SELECTIONS CONVEYED
as of December 1, 1989

Corporation	Entitlement	Date		Patent or		Acreage Conveyed	Total Acreage Conveyed
		Conveyed	Interim Conveyance	Interim Conveyance	Conveyed		
Sealaska Corporation (AA-14015)		08/10/89	IC 1446		766.0	(Subsurface of IC 1445)	
		06/26/89	IC 1440		52.0	(Subsurface of IC 1439)	
		08/05/88	IC 1396		531.75	(Subsurface of IC 1395)	
		08/05/88	50-88-0268		2,036.83	(Subsurface of 50-88-0267)	
		01/14/88	IC 1375		2,436	(Subsurface of IC 1374)	
		01/06/87	50-87-0123		1,012.42	(Subsurface of 50-87-0122)	
		01/06/87	IC 1323		519	(Subsurface of IC 1322)	
		12/19/86	IC 1300		1	(Subsurface of IC 1299)	
		10/31/86	IC 1286		25	(Subsurface of IC 1285)	
		09/30/86	50-86-0638		2.9	(Subsurface of 50-86-0637)	
		09/30/86	IC 1272		40	(Subsurface of IC 1271)	
		09/24/86	IC 1253		184	(Subsurface of IC 1252)	
		09/24/86	50-86-0514		326.25	(Subsurface of 50-86-0513)	
		06/26/86	IC 1176		5,693	(Subsurface of IC 1175)	
		10/23/85	50-86-0036		14	(Subsurface of 50-86-0035)	
		03/29/85	IC 1018		18.98	(Subsurface of IC 1017)	
		11/27/84	IC 969		24.73	(Subsurface of IC 968)	
		05/14/84	IC 842		428	(Subsurface of IC 841)	
		04/05/84	IC 813		398	(Subsurface of IC 244)	
		02/29/84	IC 798		289	(Subsurface of IC 797)	
		12/07/83	50-84-0030		2.1	(Subsurface of 50-84-0029)	
		12/07/83	IC 762		1,442	(Subsurface of 761)	
		12/29/82	IC 609		1,601	(Subsurface of IC 608)	
		12/29/82	50-83-0046		4,215	(Subsurface of 50-83-0045)	
		12/15/82	IC 581		17,546	(Subsurface of IC 244)	
		08/12/82	IC 526		240	(Subsurface of IC 525)	
		07/29/82	50-82-0095		407.474	(Subsurface of 50-82-0094)	
		04/20/82	IC 498		6,887	(Subsurface of IC 497)	
		04/20/82	50-82-0059		98.422	(Subsurface of 50-82-0058)	
		12/09/81	IC 458		21,811	(Subsurface of IC 457)	
		12/09/81	50-82-0025		1,262.01	(Subsurface of 50-82-0024)	
		09/10/81	IC 430		960	(Subsurface of IC 429)	
		06/01/81	50-81-0121		6,464.5	(Subsurface of 50-81-0120)	
		06/01/81	IC 412		600	(Subsurface of IC 411)	

TONGASS NF

NATIVE SELECTIONS CONVEYED
as of December 1, 1989

Corporation	Entitlement	Date Conveyed	Patent or Interim Conveyance	Acreage Conveyed	Total Acreage Conveyed
<u>TONGASS NF</u>					
Sealaska Corporation (AA-14015)		05/28/81	50-81-0119	21.81	(Subsurface of 50-81-0118)
		05/15/81	IC 409	2,947	(Subsurface of IC 408)
		07/18/80	IC 349	898	(Subsurface of IC 348 w/in T
		07/18/80	50-80-0119	18,893.725	(Subsurface of 50-80-0118)
		07/05/80	IC 318	21,349	(Subsurface of IC 317)
		01/22/80	IC 282	50	(Subsurface of IC 281)
		02/25/80	50-80-0058	40	(Subsurface of 50-80-0057)
		01/22/80	50-80-0044	11.4	(Subsurface of 50-80-0043)
		12/05/79	50-80-0022	20,601.9	(Subsurface of 50-80-0021)
		12/05/79	50-80-0025	10.26	(Subsurface of 50-80-0021)
		12/05/79	IC 273	158	(Subsurface of IC 272)
		12/04/79	IC 269	13	(Subsurface of IC 268)
		12/04/79	50-80-0020	23,039.885	(Subsurface of 50-80-0019)
		11/23/79	IC 262	20,852	(Subsurface of IC 261)
		11/23/79	50-80-0013	4.72	(Subsurface of 50-80-0012 w/
		11/02/79	50-80-0007	42.34	(Subsurface of 50-80-006)
		11/02/79	IC 254	20,545	(Subsurface of IC 253)
		10/30/79	IC 249	3,190	(Subsurface of IC 248)
		07/30/79	50-79-0128	21,710.66	(Subsurface of 50-79-0127 w/
		05/18/79	IC 190	1,822	(Subsurface of IC 189)
		05/18/79	50-79-0085	3,125	(Subsurface of 50-79-0084)
		02/27/79	IC 162	355	(Subsurface of IC 161)
		02/27/79	50-79-0054	1,652.32	(Subsurface of 50-79-0053)
		02/16/79	IC 156	20,103	(Subsurface of IC 155)
		08/04/78	50-78-0084	<u>3,763.01</u>	(Subsurface of 50-78-0083)

Additional subsurface estate conveyed

259,323.611 ac

NATIVE SELECTIONS CONVEYED
as of December 1, 1989

Corporation	Entitlement	Date Conveyed	Patent or Interim Conveyance	Acreage Conveyed	Total Acreage Conveyed
<u>TONGASS NF</u>					
Cape Fox (AA-6986)	23,040 (Sec. 16, ANCSA)	5/14/84	IC 841	428	
		12/29/82	IC 608	1,601	
		12/29/82	50-83-0045	4.215	
		6/1/81	50-81-0120	6,464.50	
		6/1/81	IC 411	600	
		2/27/79	IC 161	355	
		2/27/79	50-79-0053	1,652.32	
		5/18/79	IC 189	1,822	
		5/18/79	50-79-0084	3,125	
		8/4/78	50-78-0083	<u>3,763.01</u>	
					19,815.045
Goldbelt, Inc. (AA-9205)	23,040 (ANCSA) (Sec. 14(h) (3))	05/03/88	IC 1383	Land Exchange (ANCSA and ANILCA)	
		05/15/81	IC 408	2,947	
		05/28/81	50-81-0118	21.81	
		09/28/79	IC 244	<u>27,767 *</u>	30,735.81
Haida Corporation (AA-6981)	23,040 (Sec. 16, ANCSA)	09/08/88	IC 1403	Haida Land Exchange Act	
		09/30/86	IC 1271	40	
		02/25/80	50-80-0057	40	
		12/05/79	IC 272	158	
		12/05/79	50-80-0021	<u>20,612.16</u>	20,850.16
Huna Totem Corporation (AA-6980)	23,040 Sec. 16, ANCSA)	01/06/87	IC 1322	567.9 (sruveyed)	
		01/06/87	50-87-0122	1,012.42	
		09/30/86	50-86-0637	2.90	
		09/10/81	IC 429	960	
		01/22/80	50-80-0043	11.40	
		01/22/80	IC 281	35 (surveyed)	
		11/2/79	50-80-0006	42.34	
		11/2/79	IC 253	<u>20,277.38 (surveyed)</u>	
					22,909.34

*(Subsidiary) to Sealaska only 17,546 ac. IC 581 12/15/82)

*(Subsurface) to Sealaska only 398 ac. IC 813 4/5/84)

NATIVE SELECTIONS CONVEYED
as of December 1, 1989

Corporation	Entitlement	Date Conveyed	Patent or Interim Conveyance	Acreage Conveyed	Total Acreage Conveyed
<u>TONGASS NF</u>					
Kake Tribal Corporation (AA-6982)	23,040 (Sec. 16, ANCSA)	09/24/86	IC 1252	184	
		09/24/86	50-86-0513	326.25	
		03/29/85	IC 1017	18.98	
		11/27/84	IC 968	24.73	
		8/12/82	IC 525	240	
		7/30/79	50-79-0127	<u>21,710.66</u>	(2.23 acres not TNF) 22,502.39
Kavilco, Inc. (AA-6983)	23,040 (Sec. 16, ANCSA)	10/23/85	50-86-0035	14	
		12/04/79	IC 268	13.0	
		12/04/79	50-80-0019	<u>23,039.885</u>	23,066.885
Klawock-Heenya (AA-6984)	23,040 (Sec. 16, ANCSA)	08/05/88	IC 1395	57.0	
		08/05/88	50-88-0269	2,036.83	
		12/01/86	IC 1310	38	
		07/29/82	50-82-0094	407.474	
		07/18/80	IC 348	898	
		07/18/80	50-80-0118	<u>18,893.725</u>	22,331.029
Klukwan, Inc. (AA-6985)	23,040 (Sec. 16, ANCSA)	08/10/89	IC 1445	766.0	
		08/04/89	50-89-0470	22,089.486	
		06/26/89	IC 1439	52.0	
		06/05/80	IC 317	<u>(21,349)</u>	22,907.486
Kootznوو, Inc. (AA-6978)	Sec. 506(a)(3-6), ANILCA granted 7,710 acres, plus entitlement to another 21,440 acres	09/11/87	IC 1357	3,665	
		10/31/86	IC 1285	25	
		06/26/86	IC 1175	5,693	
		04/20/82	IC 497	6,887	
		04/20/82	50-82-0058	(98.422) (portion of IC 497)	
		12/02/80	ANILCA	<u>7,710 *</u>	23,980

*(Subsurface only 1,600 ac. ANILCA)

NATIVE SELECTIONS CONVEYED
as of December 1, 1989

Corporation	Entitlement	Date Conveyed	Patent or Interim Conveyance	Total Acreage Conveyed	
TONGASS NF					
Shaan Seet, Inc. (AA-6979)	23,040 (Sec. 16, ANCSA)	01/14/88	IC 1374	2,436	23,292.72
		11/23/79	IC 261	20,852	
		11/23/79	50-80-0012	<u>4.72</u>	
Shee Atika, Inc. (AA-9206)	23,040 (ANCSA) (Sec. 14(h)(3))	08/28/89	IC 1447	Shee Atika Land Exchange (60 acres net)	26,296.23
		03/21/86	50-86-0124	33.22	
		12/9/81	IC 457	21,811	
		12/9/81	50-82-0024	1,262.01	
		10/30/79	IC 248	<u>3,190</u>	
Yak-Tat Kwaan, Inc. (AA-6987)	23,040 (Sec. 16, ANCSA)	11/19/86	IC 1299	1.0	21,837.1
		07/1/74	IC 003	(1.01) (not in TNF)	
		2/16/79	IC 155	20,103	
		2/29/84	IC 797	289	
		12/7/83	50-84-0029	2.10	
		12/7/83	IC 761	<u>1,442</u>	
Total Acres Conveyed Tongass NF				518,998.072	

Sealaska Regional Corporation has subsurface rights to most Village selections

Cemetery and Historical [14(h)(1)] Sites Conveyed
as of December 1, 1989

Corporation	Forest or Area	BLM Case No.	Place Name	Date Conveyed	Patent or Interim Conveyance	Total Acreage Conveyed
Sealaska	Tongass <u>Ketchikan</u>	AA-10478	Tuxekan Village	09/28/84	IC 932	20.3
		AA-10445	Kah Shakes Cove Village	09/28/84	IC 929	4.65
		AA-10452	Village Island Village	09/28/84	IC 923	2.9
		AA-10444	Indian Point Village	09/28/84	IC 917	9.5
		AA-10440	Cape Fox Village	07/19/85	IC 1072	12.75
		AA-10441	Cat Island Burial	07/19/85	IC 1071	22.50
		AA-10457	Fort Islet	07/19/85	IC 1073	0.31
		AA-10465	Klinkwan Village	09/30/85	IC 1107	33.20
		AA-10472	St. Phillip Island Village	09/25/85	IC 1101	4.82
		AA-10447	Old Tom Creek Village and Fort	11/21/86	IC 1303	1.37
		AA-10456	Copper Harbor Pictograph	11/21/86	IC 1304	2.13
		AA-10466	Klinkwan Island Burial	09/30/85	IC 1115	3.15
		AA-10477	Tonowek Narrows Village	09/30/86	IC 1260	6.9
		AA-10460	Hetta Point Petroglyphs	09/30/85	IC 1268	9.46
		AA-10455	Chuck Creek Village	09/30/86	IC 1270	3.58
		AA-10463	Karheen Village	09/26/86	IC 1254	1.6
		AA-10476	Tonawek Burial	09/23/85	IC 1092	.07
		AA-10446	Karta River Village & Petroglyphs	09/19/86	IC 1249	4.55

Cemetery and Historical [14(h)(1)] Sites Conveyed
as of December 1, 1989

Corporation	Forest or Area	BLM Case No.	Place Name	Date Conveyed	Patent or Interim Conveyance	Total Acreage Conveyed
Sealaska	Tongass <u>Ketchikan</u>	AA-10462	Kaigani Village	07/24/86	IC 1191	8.7
		AA-10467	Kessan Island Village	07/24/86	IC 1192	6.3
		AA-10469	Nichols Bay Village	07/24/86	IC 1193	4.79
		AA-10473	Shaken Village	07/24/86	IC 1194	3.1
		AA-10474	Shaken Strait Village	07/24/86	IC 1195	1.4
		AA-10475	Sutten Creek Petroglyphs	07/24/86	IC 1196	3.8
		AA-10451	Tongass Island Village	07/24/86	IC 1188	19.2
		AA-10443	Fort Tongass Site	02/10/89	IC 1424	11.4
		AA-10454	Channel Islands Burial	05/18/89	50-89-0288	2.47
		AA-10461	Howkan Village & Burial	05/18/89	IC 1433	22.1
		AA-10467	Koinglas Village	05/18/89	50-89-0289	<u>6.84</u>
Total acreage on Ketchikan Area conveyed						233.84

Cemetery and Historical [14(h)(1)] Sites Conveyed
as of December 1, 1989

Corporation	Forest or Area	BLM Case No.	Place Name	Date Conveyed	Patent or Interim Conveyance	Total Acreage Conveyed
	<u>Chatham</u>	AA-10526	Surge Bay Village	09/28/84	IC 931	12.3
		AA-10490	Klag Bay Village	09/28/84	IC 927	4.2
		AA-10514	Powers Creek Village	09/28/84	IC 918	5.9
		AA-10489	Khaz Peninsula Village	12/17/84	IC 970	10
		AA-10502	Village on the Gate Village	07/19/85	IC 1070	3.5
		AA-10523	Icy Strait Historical Site	07/19/85	IC 1069	4
		AA-10498	Sealion Cove Village	09/30/85	IC 1114	24
		AA-10506	Chaik Bay	09/30/85	IC 1109	9.5
		AA-10519	Village Point Village	09/27/85	IC 1102	93
		AA-10527	Swanson Harbor Village	09/30/85	IC 1108	5.6
		AA-10504	Basket Bay Village	09/30/86	IC 1261	18.14
		AA-10518	Taku Village	09/30/86	IC 1264	44.0
		AA-10520	Whitewater Bay Fort	09/30/86	IC 1269	48.0
		AA-10515	Sitkok Creek Petroglyphs	09/30/86	IC 1273	17.5
		AA-10522	Young Bay Village	09/30/86	IC 1278	14.3
		AA-10486	Hoonah Sound Village	09/30/86	IC 1257	8.84
		AA-10517	Chatham Strait Petroglyph	09/30/86	IC 1190	1.4
		AA-10528	Village Point Historical Place	07/06/88	IC 1387	21.0

Total Acreage on Chatham Area conveyed

345.18

Cemetery and Historical [14(h)(1)] Sites Conveyed
as of December 1, 1989

Corporation	Forest or Area	Name and BLM Case No.	Date Conveyed	Patent or Interim Conveyance	Total Acreage Conveyed
	<u>Stikine</u>	AA-10501	09/28/84	IC 933	13.0
		AA-10481	09/28/84	IC 930	29.0
		AA-10450	09/28/84	IC 926	6.8
		AA-10442	09/28/84	IC 924	5.3
		AA-10493	09/28/84	IC 922	6.0
		AA-10487	09/28/84	IC 921	.2
		AA-10449	09/28/84	IC 919	3.0
		AA-10479	09/28/84	IC 928	3.0
		AA-10480	09/28/84	IC 925	7.0
		AA-10483	09/28/84	IC 920	9.0
		AA-10497	09/28/84	IC 916	8.5
		AA-10448	09/27/85	IC 1103	.63
		AA-10496	08/22/86	IC 1219	9.7
		AA-10482	07/23/86	IC 1189	<u>13.8</u>
Total acreage on Stikine Area conveyed					114.93
Total for Tongass NF					693.95

APPENDIX J

Haida Land Exchange



HAIDA CORPORATION

RECEIVED

DEC 27 1989

CC: RFDR

Loge LHW

December 13, 1989

PP&B R-10

Tongass National Forest
Mr. Gary Laver, District Ranger
Craig Ranger District
P.O. Box 500
Craig, Alaska 99921



Re: Tongass Land Management Plan (TLMP) Revision:
Supplemental Comments

DEC 20 1989

Dear Mr. Laver:

USFS
LRF

Haida Corporation, as a result of PL99-664 Section 10 (Haida Land Exchange Act of 1986), has selection rights in 1995 for about 8,000 acres of land that meet the following criteria:

- a. coast accessibility;
- b. economic utility; and
- c. traditional significance to Haida.

Due to the present onslaught by interest groups to circumvent the TLMP process through Congress, Haida Corporation has been defending their selection rights this past session of Congress in Washington, D.C. As a platform for this defense Haida Corporation's Board of Directors requested a certain acreage of land, which meets the above criteria, be withdrawn as a land base for Haida Corporation to exercise a partial fulfillment of their selection rights. The areas under consideration were the Karta River area, the Nutkwa area and the Sulzer/Portage area.

Haida Corporation reached a decision to seek a withdrawal of the Sulzer/Portage area (see enclosed map and legal description) to exercise a portion of their selection rights. In the process of defending their selection rights, Haida Corporation found at the least no objection and in most cases support for this withdrawal.

In a continuing effort to protect a land base that is adequate to meet the criteria for land selection under PL99-664 Section 10, Haida Corporation's supplemental comments include a land use designation that would withdraw the area as defined for partial fulfillment of Haida Corporation's entitlement. It is important

to note that this withdrawal must include the subsurface estate as well as the surface estate.

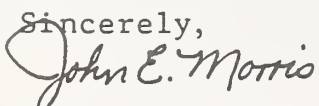
Haida Corporation also submits supplemental comments for the TLMP revision to provide for a withdrawal of the subsurface estate of those lands identified as the Haida Traditional Use Sites, the surface estate of which was conveyed to Haida Corporation in Interim Conveyance No. 1403 dated September 8, 1988 subject to valid existing rights from all forms of entry or appropriation under the mining laws of the United States and for leasing under the mineral and geothermal leasing laws. However, the withdrawal needs to provide that Haida Corporation or any granted easement may have available for their development any sand, gravel or other mineral materials in such lands as are subject to disposition pursuant to the Mining Materials Act of 1947.

Another area Haida Corporation requests consideration for in the TLMP revision process is comprised of the lands purchased by the United States under the Land and Water Conservation Fund from Haida Corporation as described in PL99-664 Section 3(b). Haida Corporation requests management of this area to provide for public outdoor recreational use in accordance with the laws, rules, and regulations applicable to the National Forest System. As you may know, Haida Corporation has sought this area to be established as the Hydaburg National Recreation Area.

Haida Corporation wishes to discuss their TLMP revision supplemental comments with you at your earliest convenience. Copies will be sent up the ladder of authority from our office as well as to the Alaska Congressional delegation in Washington, D.C.

I trust we are in the scope of allowable comment.

Sincerely,



John E. Morris
General Manager

cc: Supervisor's Office - Ketchikan
~~Regional Office - Juneau~~
Walt Sheridan - USFS Juneau
Senator Ted Stevens - Washington, D.C.
Senator Frank Murkowski - Washington, D.C.
Congressman Don Young - Washington, D.C.

Enc.



HAIDA CORPORATION

December 20, 1989

Tongass National Forest
TLMP Revision IDT
8465 Old Dairy Road
Juneau, Alaska 99801

Re: Tongass Land Management Plan (TLMP) Revision -
Supplemental Comments

Dear Sirs:

As we promised in our earlier comments submitted to yourselves in February 1988, Haida Corporation respectfully submits the enclosed "Supplemental Comments" which address specific land management prescriptions for land within the Craig Ranger District. Haida Corporation wishes to encourage the incorporation of their comments in your Draft TLMP Revision due out in 1990.

Should you have any questions or concerns relating to any of our comments we would be more than happy to discuss them with you.

Sincerely,

John E. Morris

John E. Morris
General Manager

cc: District Office - Craig
Supervisor's Office - Ketchikan
~~Regional Office - Juneau~~
Walt Sheridan - USFS Juneau
Senator Ted Stevens - Washington, D.C.
Senator Frank Murkowski - Washington, D.C.
Congressman Don Young - Washington, D.C.

Enc.

Tongass Land Use Management Plan Revision
Supplemental Comments
submitted by:
Haida Corporation

Comment 1: Haida Corporation has identified the Sulzer/Portage area (see attached maps and legal description) to be designated withdrawn from all forms of appropriation under the public land laws, including the mining and mineral leasing laws, and from selection under the Alaska Statehood Act as amended. The Sulzer/Portage area as defined be given a land use designation that would provide for a land base for partial fulfillment of Haida Corporation's land selection rights under P.L. 99-664.

Basis: P.L. 99-664, the Haida Land Exchange Act of 1986, provides Haida Corporation land selection rights from Federal land within the State of Alaska after January 1, 1995. Haida Corporation has selection rights for approximately 8,000 acres of land that meet the following statutory criteria:

- a. coastal accessibility;
- b. economic utility; and
- c. traditional significance to Haida.

P.L. 99-664 permits that land be withdrawn for this purpose under consultation with the Secretaries of Agriculture and Interior and the State of Alaska. TLMP is a tool to be responsive in this process.

Comment 2: A designation of withdrawal of the subsurface estate of those lands identified as the Haida Traditional Use Sites, the surface estate of which was conveyed to Haida Corporation in Interim Conveyance No. 1403 dated September 8, 1988, subject to valid existing rights from all forms of entry or appropriation under the mining and mineral laws of the United States and for leasing under the mineral and geothermal leasing laws. However, the withdrawal needs to provide that Haida Corporation or any granted easement may have available for their development any sand, gravel or other mineral materials in such lands as are subject to disposition pursuant to the Mining Materials Act of 1947.

Basis: As the surface estate owner, Haida Corporation wishes to preserve the integrity of their surface estate selections. If it is Haida Corporation's plan to develop that surface estate, or a pre-conveyance existing right or easement then they too must be allowed to develop their interests.

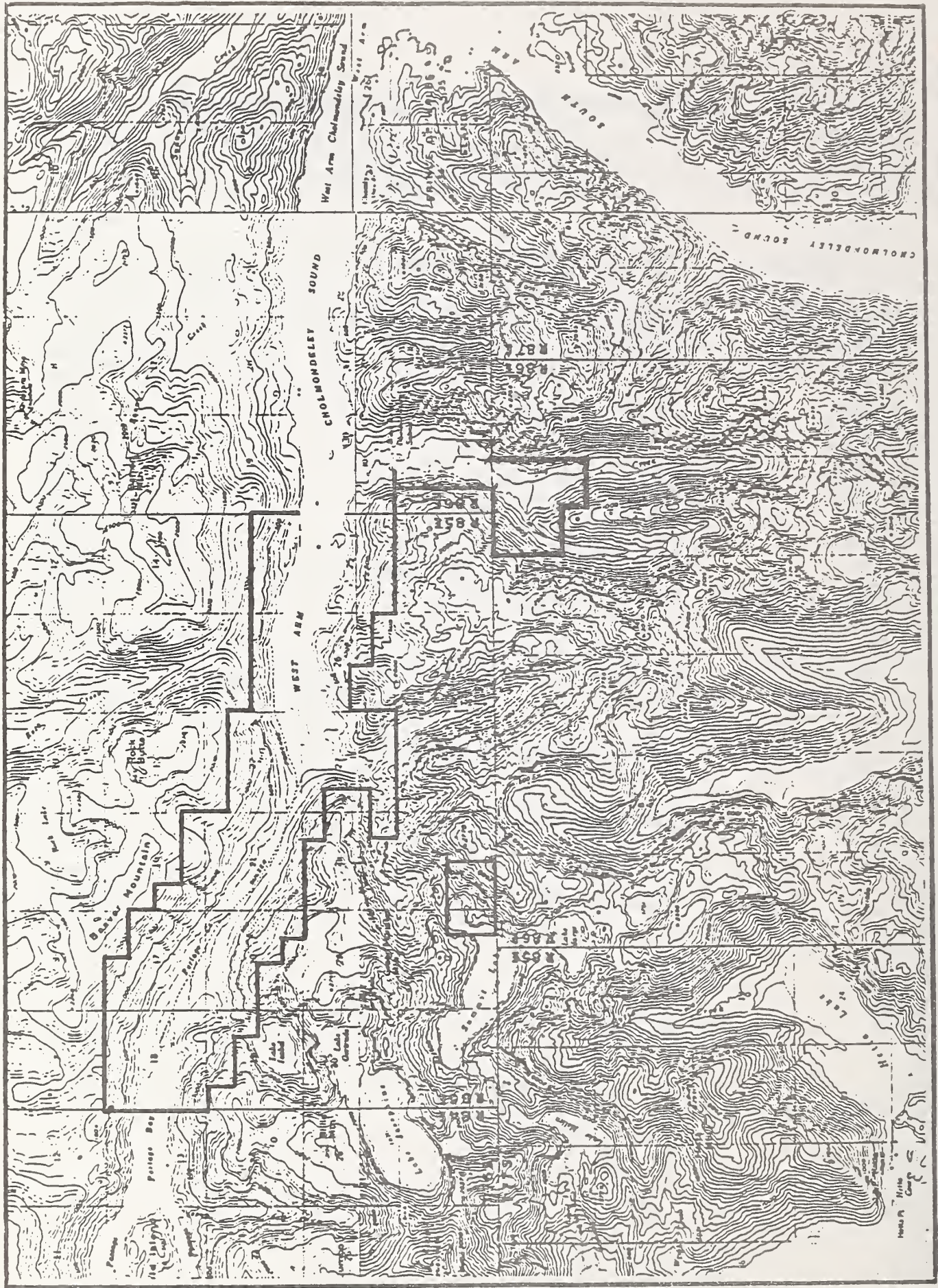
Comment 3: A designation for management of the area purchased by the United States under the Land and Water Conservation Fund from Haida Corporation as described in P.L. 99-664 Section 3(b) to provide for public, outdoor recreational use in accordance with the laws, rules and regulations applicable to the National Forest System.

Basis: Haida Corporation has sought this area to be established as the Hydaburg National Recreation Area. As the previous land owner, Haida Corporation's opinion of this area's highest and best use is for outdoor recreational purposes only. The purchase of this area by the United States under the Land and Water Conversation Fund only supports our recreational designation.

MAIDA CORPORATION LAND SELECTION AMENDMENT

Sulzer Portage Withdrawal Area Legal Description

<u>Section</u>	<u>Copper River Meridian</u>	<u>Acres</u>
	<u>Township 76S, Range 85E</u>	
16	S1/2S1/2, NW1/4SW1/4	200
17	W1/2, SE1/4, S1/2NE1/4	560
18	All, Fractional	510
19	N1/2NE1/4, SE1/4NE1/4, NE1/4NW1/4	160
20	N1/2, N1/2SE1/4, SE1/4SE1/4	440
21	All	640
22	S1/2, S1/2N1/2, Fractional	450
23	S1/2, Fractional	145
24	S1/2, Fractional	285
25	All, excluding islets	410
26	N1/2, N1/2SE1/4, Fractional	305
27	E1/2, E1/2W1/2, NW1/4NW1/4, SW1/4SW1/4	530
28	NE1/4NE1/4, SE1/4SE1/4	80
31	SW1/4, W1/2SE1/4	200
	<u>Township 76S, Range 86E</u>	
30	SW1/4, including all fractional lands on west shore of Big Creek Bay	135
	<u>Township 76S, Range 86E</u>	
31	E1/2W1/2, SW1/4SE1/4, NW1/4SE1/4	220
	<u>Township 77S, Range 86E</u>	
2	N1/2, SE1/4, N1/2SW1/4	560
TOTAL ACRES		5,810



SELECT AREA

HAIDA CORPORATION LAND EXCHANGE
Section 10 19-664

Date: 12/13/89
Acres: 5810

APPENDIX K

Historic Study Topics

APPENDIX K - Historic Study Unit Topics/Themes as suggested in the Alaska Comprehensive Historic Preservation Plan Workshop 1988

EXPLORATION AND SETTLEMENT

- A. Exploring expeditions
 - 1. 1741-1867: Russian and Euroamerican Influences
 - 2. 1867-1912: Early American Influences
 - 3. 1912-1938: Community Building
 - 4. 1938-1959: World War II Era
- B. Trading Ventures
 - 1. 1741-1867: Russian and Euroamerican Influences
 - 2. 1867-1912: Early American Influences
 - 3. 1912-1938: Community Building
 - 4. 1938-1959: World War II Era
- C. Forts and government settlements
 - 1. 1741-1867: Russian and Euroamerican Influences
 - 2. 1867-1912: Early American Influences
 - 3. 1912-1938: Community Building
 - 4. 1938-1959: World War II Era
- D. Commercial settlements/sites
 - 1. 1741-1867: Russian and Euroamerican Influences
 - 2. 1867-1912: Early American Influences
 - 3. 1912-1938: Community Building
 - 4. 1938-1959: World War II Era
- E. Native lifeways (treaties, tribal boundaries, etc.)
 - 1. 1741-1867: Russian and Euroamerican Influences
 - 2. 1867-1912: Early American Influences
 - 3. 1912-1938: Community Building
 - 4. 1938-1959: World War II Era

MILITARY AND GOVERNMENT

- A. Defense efforts (forts)
 - 1. 1741-1867: Russian and Euroamerican Influences
 - 2. 1867-1912: Early American Influences
 - 3. 1912-1938: Community Building
 - 4. 1938-1959: World War II Era
- B. Combat activities (battle sites)
 - 1. 1741-1867: Russian and Euroamerican Influences
 - 2. 1867-1912: Early American Influences
 - 3. 1912-1938: Community Building
 - 4. 1938-1959: World War II Era
- C. Civilian displacement
 - 1. 1741-1867: Russian and Euroamerican Influences
 - 2. 1867-1912: Early American Influences
 - 3. 1912-1938: Community Building
 - 4. 1938-1959: World War II Era
- D. Treaties, purchases, boundaries
 - 1. 1741-1867: Russian and Euroamerican Influences
 - 2. 1867-1912: Early American Influences
 - 3. 1912-1938: Community Building
 - 4. 1938-1959: World War II Era

COMMERCE AND ECONOMIC DEVELOPMENT

- A. Gold Mining

1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era
 - B. Copper Mining
1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era
 - C. Coal Mining
1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era
 - D. Other Minerals
1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era

FUR TRADE AND AGRICULTURE

- A. Fur hunting, trading
 1. 1741-1867: Russian and Euroamerican Influences
 2. 1867-1912: Early American Influences
 3. 1912-1938: Community Building
 4. 1938-1959: World War II Era
- B. Fur farming
 1. 1741-1867: Russian and Euroamerican Influences
 2. 1867-1912: Early American Influences
 3. 1912-1938: Community Building
 4. 1938-1959: World War II Era
- C. Animal herding
 1. 1741-1867: Russian and Euroamerican Influences
 2. 1867-1912: Early American Influences
 3. 1912-1938: Community Building
 4. 1938-1959: World War II Era
- D. Agriculture
 1. 1741-1867: Russian and Euroamerican Influences
 2. 1867-1912: Early American Influences
 3. 1912-1938: Community Building
 4. 1938-1959: World War II Era
- E. Homesteading
 1. 1867-1912: Early American Influences
 2. 1912-1938: Community Building
 3. 1938-1959: World War II Era

FISHERIES AND SEA MAMMAL HUNTING

- A. Whaling
 1. 1741-1867: Russian and Euroamerican Influences
 2. 1867-1912: Early American Influences
 3. 1912-1938: Community Building
 4. 1938-1959: World War II Era
- B. Hunting other sea mammals

1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era
 - C. Salteries and canneries
1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era
 - D. Ship and boat building
1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era
 - E. Timber
1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era
 - F. General Commerce
1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era

TRANSPORTATION AND COMMUNICATION

- A. Trails
 1. 1741-1867: Russian and Euroamerican Influences
 2. 1867-1912: Early American Influences
 3. 1912-1938: Community Building
 4. 1938-1959: World War II Era
- B. Roads
 1. 1741-1867: Russian and Euroamerican Influences
 2. 1867-1912: Early American Influences
 3. 1912-1938: Community Building
 4. 1938-1959: World War II Era
- ? C. Railroads
 1. 1912-1938: Community Building
 2. 1938-1959: World War II Era
- D. Steamship/Riverboat routes, ports
 1. 1741-1867: Russian and Euroamerican Influences
 2. 1867-1912: Early American Influences
 3. 1912-1938: Community Building
 4. 1938-1959: World War II Era
- ?? E. Mail Routes
 1. 1867-1912: Early American Influences
 2. 1912-1938: Community Building
 3. 1938-1959: World War II Era
- ?? F. White Alice sites
 1. 1938-1959: World War II Era

ADJUNCT STRUCTURES AND BUILDINGS

- A. Bridges

1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era

B. Ferries

1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era

?

C. Aircraft

1. 1912-1938: Community Building
4. 1938-1959: World War II Era

D. Ships and boats

1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era

INTELLECTUAL AND SOCIAL INSTITUTIONS

A. Churches

1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era

B. Cemeteries

1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era

C. Art, architecture, music

1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era

D. Schools/Education

1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era

E. Hospitals/Health

1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era

F. Scientific research and technical development(adaptations to the north)

1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era

G. Social organizations

1. 1741-1867: Russian and Euroamerican Influences

2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era
 - H. Community Celebrations
1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era
 - H. Sporting events
1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era
 - I. Newspapers/Literature
1. 1741-1867: Russian and Euroamerican Influences
2. 1867-1912: Early American Influences
3. 1912-1938: Community Building
4. 1938-1959: World War II Era

APPENDIX L

Wetlands

APPENDIX L

ACRES OF WETLANDS BY GEOZONE 1/

GEOZONE	ACRES	GEOZONE	ACRES	GEOZONES	ACRES
C01	31,211	K01	26,626	S01	90,205
C02	89,290	K02	36,374	S02	47,914
C03 <u>2/</u>	215	---	-----	S03	165,993
C04	8,082	K04	167,833	S04	43,345
C05	32,542	K05	84,941	S05	63,143
C06	88,011	K06	303,762	S06	82,017
C07	4435	K07	117,333	S07	52,011
---	-----	K08	137,540	S08	64,328
C09	37,350	K09	32,100	S09	121,559
C10	94,368	K10	33,137	S10	185,878
C11	10,197	K11	69,432	S11	18,495
C12 <u>2/</u>	484	K12	70,557	S12 <u>2/</u>	27
C13 <u>2/</u>	354	K13 <u>2/</u>	746	S13	16,608
C14	331	K14 <u>2/</u>	289	S14	7,962
C15 <u>2/</u>	277	K15	1,699		
C16 <u>2/</u>	55				
C17 <u>2/</u>	332				
C18	34,578				
C20	31,310				
C21	18,331				
C22	38,796				
C23	49,853				
C24	64,491				
C25	39,964				
TOTALS	674,857		1,082,369		959,485

Source: Revision Database, December 18, 1989

- 1/ These are acres of the Palustrine (muskeg, forest and scrub-shrub) Wetland System. Lacustrine System Wetlands are not part of these numbers in this table.
- 2/ These Geozones have not been inventoried or if they have been inventoried as S12 has been, they have not been entered into the GIS data base. Acres recorded in the Geozones are along their boundaries and are the result of adjustment in final boundaries in GIS and the boundary established for the field inventory process.

APPENDIX M

Existing Wilderness

APPENDIX M

ANALYSIS OF THE MANAGEMENT SITUATION OF EXISTING WILDERNESS

January 1990 Draft

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ANALYSIS OF THE MANAGEMENT SITUATION OF EXISTING WILDERNESS

SECTION I

OVERVIEW OF MANAGEMENT OF THE WILDERNESS RESOURCE

HISTORIC MANAGEMENT OF WILDLANDS ON THE TONGASS NF

Since its first designation as the Alexander Archipelago Forest Reserve in 1902, much of the Tongass National Forest has remained in a relatively pristine condition due to its inaccessibility, steep topography and wet climate. Early management was primarily custodial. The diaries of early forest officers show that the Forest Service presence consisted of a very few dedicated rangers who patrolled and administered vast areas by boat. They administered land use permits, occasional small timber sales, and tried to prevent trespass, often under very difficult and hazardous conditions. Because of the marine environment with its relative absence of forest fires, and the unsuitable conditions for livestock grazing in the rain forests of southeast Alaska, the work, travel methods, and living conditions of early forest officers on the Tongass were often quite different from their counterparts in the western states. (Rakestraw, Lawrence A., A History of the United States Forest Service in Alaska, 1981) Consequently, the vast networks of administrative trail systems, phone lines, fire guard stations, lookouts, fences and other grazing facilities that were typical on National Forests in the western states never developed on the Tongass.

Historically, human occupancy and use of the Wildernesses on the Tongass has been limited. Alaska Natives used some of the areas for hunting, fishing, and villages. Some areas, such as the West Chichagof-Yakobi, experienced early handlogging and mining, and were occupied for a time by fur farmers, trappers, cannery operators, and occasional settlers. Much of this activity occurred near the shoreline with little activity occurring inland except along some river valleys, around a few lakes and at occasional mines. In sharp contrast to the western states, where travel by natives, ranchers, packers and forest rangers depended upon the horse and where trail and road systems evolved, travel in Southeast Alaska has depended upon the boat, and more recently, the airplane. With a few notable exceptions, such as the Chilkoot and Dalton trails into the interior, horse use was and is limited in the wildlands of Southeast Alaska. The maritime forest of islands, muskegs, dense vegetation, and wet climate and soil conditions has limited the suitability of horse travel. The result is that the traditional methods of travel within existing designated wilderness are quite different from wilderness in the western states, and that Alaskan Wildernesses do not have extensively developed trail systems.

Administrative designation as wilderness was considered as early as the 1920's but was not established until passage of the Alaska National Interest Lands Conservation Act (ANILCA) in 1980; however, portions of two of the current wildernesses were administratively designated scenic areas under the authority of Regulation U-3. They are: the Tracy Arm-Fords Terror Scenic Area which is now part the Tracy Arm-Fords Terror Wilderness and Walker Cove-Rudyard Bay Scenic Area which is now part of Misty Fiords National Monument Wilderness. Other special management areas such as the New Eddystone Rock Geologic Area were also administratively designated to provide protection of unique areas and natural features. Steamer lanes were established along some waterways to limit clearcutting and protect the viewshed along along travel routes.

Admiralty Island has been considered and debated over as a potential National Monument since 1930. (Rikestraw) Pack Creek and Thayer Mountain were administratively designated as bear sanctuaries. Some timber harvesting occurred on the west side of the Island and along Seymour Canal. Native and state land selections occurred on the west side of Admiralty and a major mineral deposit was located in the Greens Creek Area. However the majority of the Island remained undeveloped. In December 1978, President Carter established the Admiralty Island National Monument and the Misty Fiords National Monument by presidential proclamation under the authority of the 1906 Antiquities Act.

Prior to the passage of ANILCA, the lands designated as wilderness by that Act were managed for multiple uses with varying degrees of planned resource development depending on the particular area. Recreation use was encouraged and facilitated through a system of public recreation cabins spread across the Tongass. Hiking trails were developed to provide access from the shoreline to lakes, hot springs and alpine areas. Brochures provided information on attractions, beach camping techniques, and safety measures necessary to cope with the special conditions and hazards found in Southeast Alaska. In some areas permits were issued for individual hunting and recreation cabins.

FORMAL DESIGNATION OF WILDERNESSES

On December 2, 1980 through the enactment of Public Law 96-487, the Alaska National Interest Lands Conservation Act (ANILCA), Congress designated 43 areas as wilderness totaling 56.4 million acres in Alaska as a part of the 91 million acre National Wilderness Preservation System. Included were 5.4 million acres in 14 Wildernesses established on the Tongass National Forest. Within these 14 Wildernesses are found the typical wildland ecosystems of Southeast Alaska. Two of the areas, Admiralty Island Wilderness and Misty Fiords Wilderness, are also designated as National Monuments.

ANILCA established the following Wildernesses on the Tongass National Forest to be administered by the USDA Forest Service:

Table 1

TONGASS WILDERNESSES ESTABLISHED BY ANILCA

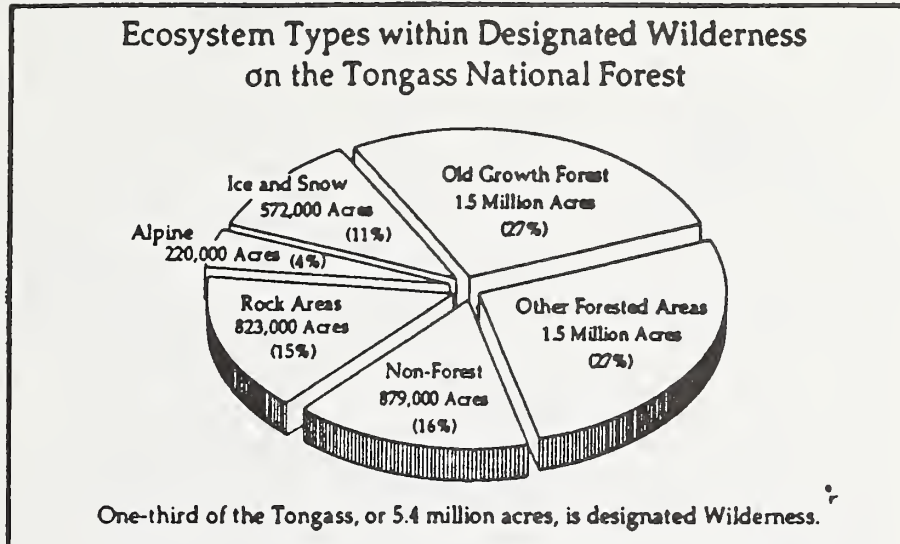
Name	Gross	Non-NFS Acres	Net
Admiralty Island National Monument Wilderness	969,564	32,168	937,396
Coronation Island Wilderness	19,232	0	19,232
Endicott River Wilderness	98,729	0	98,729
Maurelle Islands Wilderness	4,937	0	4,937
Misty Fiords National Monument Wilderness	2,142,907	664	2,142,243
Petersburg Creek-Duncan Salt Chuck Wilderness	46,849	72	46,777
Russell Fiord Wilderness	348,701	0	348,701
South Baranof Wilderness	319,568	0	319,568
South Prince of Wales Wilderness	91,018	22	90,996
Stikine-LeConte Wilderness	449,951	1,025	448,926
Tebenkof Bay Wilderness	66,839	0	66,839
Tracy Arm-Fords Terror Wilderness	653,179	0	653,179
Warren Island Wilderness	11,181	0	11,181
West Chichagof-Yakobi Wilderness	<u>265,529</u>	<u>782</u>	<u>264,747</u>
TOTAL ACREAGE	5,488,184	34,733	5,453,451

Source:

These are the computed acreages as reported to Congress with official boundary maps. These acreages may change over time as mining claims or

State and Native land selections are patented. These wildernesses include only the public lands above mean high tide.

Within the 14 Tongass Wildernesses are found the wildland ecosystems of Southeast Alaska including 1 1/2 million acres of old growth forest. The following figure shows the relative amounts of land in various major ecosystem types:



The 14 wildernesses are mostly in a pristine condition where the imprint of man's work is substantially unnoticeable. They offer outstanding opportunities for solitude and primitive recreation. Over 90 percent of the area of these wildernesses have been inventoried in the Recreation Opportunity Spectrum (ROS) Primitive (PI and PII) category with the remainder mostly in the Semiprimitive Non-Motorized and Semiprimitive Motorized categories.

Figure XX

WILDERNESS ROS IN THOUSANDS OF ACRES

NAME	GEO	Total	PI	PII	SPNM	SPM	R	RN	RM

W. Chich-Yakobi	C03	65.9	44.4	8.2	8.0	5.3	0.0	0.0	0.0
W. Chich-Yakobi	C12	207.8	135.4	53.5	8.1	10.8	0.1	0.0	0.0
South Baranof	C13	315.7	241.5	57.5	7.3	9.1	0.2	0.0	0.0
Tracy Arm	C14	650.1	492.8	122.1	23.3	11.9	0.0	0.0	0.0
Admiralty	C15	964.3	559.5	220.4	20.8	159.2	0.2	2.4	1.8
Endicott River	C16	98.1	95.4	0.2	2.4	0.0	0.0	0.0	0.0
Russel Fiord	C17	349.1	263.5	68.8	11.2	3.5	0.0	0.0	2.1

Chatham Total		2,651.0	1,832.5	530.6	81.1	199.9	0.5	2.5	3.9

Misty Fiords	K13	2,131.7	1,561.1	523.4	6.7	40.2	0.0	0.0	0.2
S. Pr. of Wales	K14	87.6	50.5	37.1	0.0	0.0	0.0	0.0	0.0
Coronation Is.	K15	19.1	19.1	0.0	0.0	0.0	0.0	0.0	0.0
Maurelle Is.	K15	4.7	0.1	4.3	0.0	0.3	0.0	0.0	0.0
Warren Is.	K15	11.3	11.3	0.0	0.0	0.0	0.0	0.0	0.0

Ketchikan Total		2,254.3	1,642.0	564.9	6.7	40.5	0.0	0.0	0.2

Tebenkof Bay	S11	67.5	40.2	23.5	0.0	2.4	0.0	0.0	1.4
Stikine-LeConte	S12	448.7	257.7	21.6	73.9	95.5	0.0	0.0	0.0
Petersburg Cr.	S13	47.8	6.9	17.2	12.3	11.4	0.0	0.0	0.0

Stikine Total		564.1	304.8	62.3	86.2	109.4	0.0	0.0	1.4

Tongas Wilderness Total		5,469.4	3,779.3	1,157.8	174.0	349.7	0.5	2.5	5.6

Source: TLMP GIS Data Base

Figure XX

(INSERT VICINITY MAP OF SOUTHEAST ALASKA SHOWING LOCATIONS OF THE 14 TONGASS WILDERNESS AREAS)

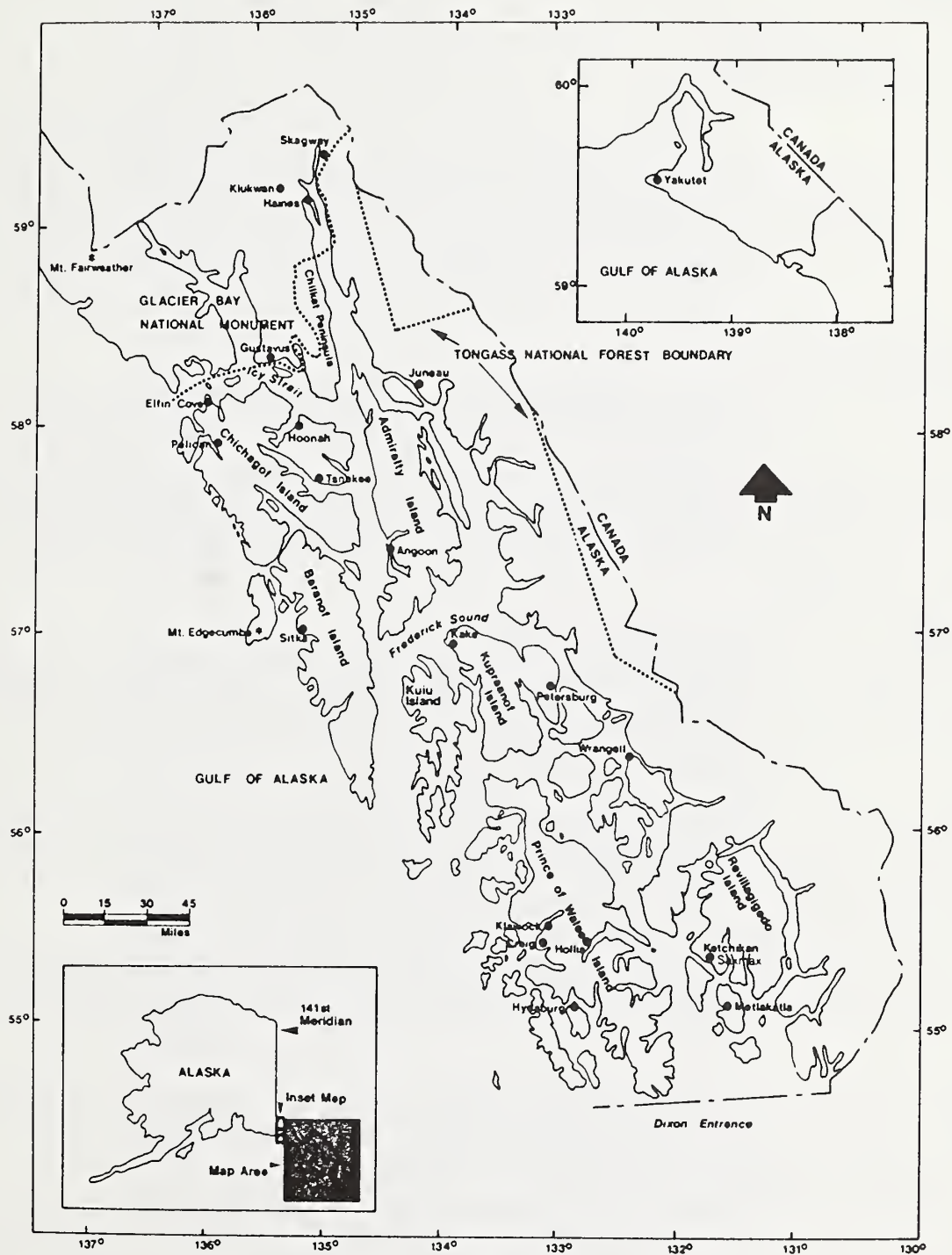


Figure 2.--Southeast Alaska.

DESCRIPTION OF INDIVIDUAL WILDERNESSES

Following are detailed descriptions of each of the 14 individual Wildernesses.

ADMIRALTY ISLAND NATIONAL MONUMENT WILDERNESS

ADMINISTRATIVE FACTORS

Location The Admiralty Island National Monument Wilderness (AINMW) is located on Admiralty Island approximately 15 miles southwest of Juneau, Alaska. The 937,459 acre wilderness occupies most the the island except for 32,105 acres of privates lands for a total of area of 969,564 acres. The wilderness is entirely within Admiralty Island National Monument which is administered as a unit of the Chatham Area, which is part of the Tongas National Forest. VCU'S 134 through 184 are encoumpassed in the Wilderness. A complete legal description is on file at Forest Service offices in Juneau and Sitka, Alaska.

Administrative Facilities

AINMW is managed primarily out of the Juneau office which consists of an office and a warehouse. There are also facilities in Angoon, the only town on Admiralty. An office is staffed in the old city hall and there is an administrative site which includes a bunkhouse and warehouse which the wilderness rangers and trail crew use as a base of operations. An administrative cabin for emergency purposes is located on the southern portion of the Glass Peninsula.

PHYSICAL ENVIRONMENT

Geography

On the Northern portions of Admiralty, mountainous terrain tends to be rugged and snow covered most of the year. Mountain elevations vary from 3,000-4,700 feet. The Admiralty Lakes area in the center of the island is gentle rolling terrain, while the southern portion of the Island is again mountainous.

Rocky islands, reefs and rock bluffs are found frequently in the Mitchell Bay-Kootznoowoo area and along the southern tip of Admiralty. Rocky shorelines interspersed with small gravel beaches are found throughout the character type. Higher portions of Admiralty have rocky spires, stone faces, horns and aretes visible for many miles from the adjacent waterways.

Many large lakes such as Hasselborg, Thayer and Florence, and a lake chain within the Admiralty Lakes unit are found in the Wilderness. Streams on the island are generally larger and longer than on any other island in northern southeast Alaska.

All streams are clear, rather than glacial, and many offer considerable variety, e.g. pools, rapids, cascades, riffles, falls and meandering forms. Saltwater bays and estuaries are numerous.

Numerous tidal meadows of varying sizes are found on the island. Lower slopes are generally densely forested, but sometimes exhibit a combination of muskeg

openings, brush and scattered tree cover up to approximately 2,500 feet in altitude. Muskeg conifer mixtures are plentiful on east Admiralty. West Admiralty, north of Angoon to Hawk Inlet, displays an essentially unbroken forest cover on lower mountain slopes. Upper slopes and summits appear barren from a distance, but usually offer a variety of alpine vegetation as well as numerous rock outcroppings.

Climate

Maritime weather dominates Southeast Alaska. Normal temperatures range from the 40's to mid-60's F. in summer, and from the high teens to low 40's F. in winter. In summer, cooler temperatures occur on or near the outer coasts while warmer temperatures prevail farther inland. In winter, the reverse is true. Extreme temperatures occur in both winter and summer when air masses from Canada override the coastal mountains, bringing clear skies and continental air to the archipelago.

Storms and moderate-to-heavy precipitation occur throughout the year, although storms are most frequent and precipitation is heaviest from September through November. In winter, snow falls frequently throughout the region and accumulations of 60 to 100 inches or more are not uncommon. At higher elevations more than 200 inches of snow may fall and accumulate each year.

Surface winds are moderate to strong throughout Southeast Alaska. Prevailing winds generally blow from the south or southeast, except where local topography influences wind direction. Certain conditions of temperature and pressure gradient may also substantially increase winter wind velocities.

Air

Air quality in Southeast Alaska is generally very good. The region contains no designated non-attainment areas for air quality. There are relatively few major emissions sources in the region, and pollutants are rapidly dispersed by winds and removed by precipitation. Air quality in the state is regulated by the Alaska Department of Environmental Conservation.

Fire

The incidence of forest fire on Admiralty Island is extremely low, although evidence of old burns exists. Summer rainfall and the relative infrequency of summer electrical storms are major factors in reducing wildfire potential. Over a hundred years ago, a fire at the upper end of Mitchell Bay may have burned over 1,000 acres. More recently, an island in Kanalku Bay was entirely burned over. Wildfires are generally man-caused and due to escaped campfires.

Minerals

In the past, gold and coal were the only minerals produced on Admiralty Island. Over 600 tons of coal were mined at Kanalku Bay. Mining in National Forests is guided by the general mining laws of the United States. These are implemented through the National Forest Mining Regulations (36 CFR 228). Sections 503 and 504 of ANILCA amended the general mining laws, giving additional direction for mining within Admiralty Island National Monument. Section 503 calls for promulgation of reasonable regulations to assure that mining activities are compatible, to the maximum extent feasible, with the purposes for which the Monument was established.

The special provisions of Sections 503 and 504 of ANILCA are now being applied to mineral activities on Admiralty National Monument. Within the Monument there is a band of geological formations that hold potential for mineralization. This band begins on northwest Admiralty and trends in a southeasterly direction. Within this area two groups of claims have been validated since withdrawal as a

National Monument. Chief among these are the 17 Big Sore claims at Greens Creek which have now been developed and are actively operating as the Greens Creek Mine. This mine is within the Monument but outside the Wilderness and is producing silver, gold, lead, and zinc.

Within the Wilderness are the Pyrola claims of which three claims have been determined to be valid. These claims are located in the Lake Kathleen drainage, and the owners are currently pursuing an application for patent. There are no plans for mine development at this time. Other mining claims on the Monument have largely been abandoned by the owners and revoked by the BLM.

Water

The tremendous volume of water that falls as precipitation across Southeast Alaska is difficult for most people to comprehend; one inch of rainfall distributed over one square mile amounts to 17.4 million gallons of water. Southeast Alaska receives an average of about 100 inches of precipitation annually. About 35 percent of this falls as snow.

In spite of the abundant amount of precipitation in this region, groundwater is generally scarce. Extensive areas of shallow or poorly drained soils and the presence of bedrock close to the soil surface inhibit deep aquifer formation. The majority of the precipitation is rapidly returned to the ocean via the large number of streams present throughout the area.

Streamflows vary greatly, even over short periods of time. Daily flows in all streams are lowest from December through March. During the winter and early spring months, precipitation accumulates as snow in the high basins. When temperatures rise in the late spring, snowmelt causes runoff to increase rapidly. High rates of flow usually occur during July, August and September. By mid-November flows begin to recede to prevailing winter lows.

Soils

In Southeast Alaska high precipitation and cool temperatures slow decomposition of organic matter and result in soils covered by a thick, constantly moist, organic duff layer, high in nutrient content. Below this organic layer, soil fertility is commonly low.

Organic soils in Southeast Alaska include alpine organic soils, well-drained organic soils derived from forest litter over bedrock or gravel, and wet organic soils derived from various vegetative materials. The wet organic soils below the alpine can generally be placed into four groups: (1) poorly decomposed moss peat (Kogish Series); (2) moderately decomposed sedge peats (Kina Series); (3) poorly decomposed sedge peats (Staney Series); and (4) mucks over peats (Maybeso and Kaikli Series).

Of these four major kinds of wet organic soils, only those of the last group (Maybeso and Kaikli soils) support forest vegetation; they represent about 10 percent of the landscape. The others are muskeg, that is, the vegetation on them is dominated by sphagnum mosses or sedges or both, with low shrubs and forbs and only scattered trees. They represent about 14 percent of Southeast Alaska's landscape.

The wet organic soils throughout Southeast Alaska comprise about 24 percent of the landscape. Estimates derived from timber inventory of Southeast Alaska indicate that about 36.2 percent of the area is included in alpine meadows, brushfields, rock, snow, and icefields. The remaining 39.8 percent is comprised

of soils derived from glacial till and residual bedrock. This includes soil types which support conifers, alder brush, and natural grassland.

The organic mat which accumulates on the surface of these glacial tills and residual soils is a storehouse of plant nutrients. The depth of tree rooting is confined primarily to this organic mat and the upper 12 inches of mineral soil.

Lands

Land Status: AINMW comprises 937,564 acres. There is an additional 32,105 acres of inholdings which are listed below.

Angoon Area: Kootznoowoo, Inc. has received title to approximately 1800 acres adjacent to Angoon through ANILCA. These lands will be available for community expansion, aquaculture and a variety of other developments. In addition, Kootznoowoo has selected approximately 3700 acres in the Mitchell Bay area, consisting of land from mean high tide to 660 feet inland. This strip of land along the shore would carry the following ownership stipulations to protect both the rights of Kootznoowoo and wilderness values: no commercial logging, provision for public access, and no development except that which is authorized by the Secretary of Agriculture as being consistent with the management of the Monument.

Cube Cove - Lake Kathleen area: Approximately 23,073 acres in the vicinity of Cube Cove and Lake Kathleen has been claimed through Native selection by Shee Atika for timber harvest. Sealaska holds subsurface rights to these lands.

Patented land: Approximately 1092 acres are patented land that are wilderness inholdings.

Table Number XX PRIVATE INHOLDINGS

Location	Acreage
Kanalku	132.67
Tyee	12.43
Tyee	18.32
Pybus	32.59
Hood Bay	54.05
Mole Harbor	134.53
Wheeler Creek	71.80
Wheeler Ck./Chatham St.	7.88
Gambier	14.63
Hood Cannery	610.00
Hood Bay	3.50
	1092.40

State Selections: The State of Alaska selected 365 acres at Oliver Inlet for a Marine Park.

Non-Recreation Special Use Permits: There are 47 non-recreational special use permits within the Wilderness. Of these 47 permits, 26 are private hunter or trapper cabins, nine are related to the Greens Creek mine, six are for agencies performing work on Admiralty, four are temporary camps permitted under ANILCA (Section 1316a), with the rest being of a miscellaneous nature. Of the two ADF&G cabins in Hood Bay one is in the process of becoming a Forest Service emergency cabin and one is part of a Native allotment claim.

Table Number XX

NON-RECREATION SPECIAL USE PERMITS

Location	Special Use	Holder
Wheeler Creek	transmission/recieving	Alascom, Inc.
Angoon	road approach & float	Alaska Publ.Works
Pleasant Bay	fish weir	ADF&G
Hood Bay (2)	cabin	ADF&G
King Salmon Bay	fish weir	ADF&G
Pleasant Bay	cabin	private
Seymour Canal (7)	cabin	private
Fools Inlet	cabin	private
Swan Island (3)	cabin	private
King Salmon Bay (2)	cabin	private
Wheeler Creek	cabin	private
Mole Harbor	temporary camp	private
Glass Peninsula (4)	cabin	private
Greens Creek	private road	Greens Ck. Mine Co.
Greens Creek (2)	construction camp	Greens Ck. Mine Co.
Greens Creek (4)	mineral material sales	Greens Ck. Mine Co.
Greens Creek	stockpile site	Greens Ck. Mine Co.
Greens Creek	tailings basin	Greens Ck. Mine Co.
Seymour Canal (2)	temporary camp	private
Point Arden	cabin	private
Sore Finger Cove	tent platform	private
Kootznoowoo Inlet	cultivation	private
Swan Cove	cabin	private
Gambier Bay	cabin	private
Thayer Lake	hydroelectric	private
Pybus Bay	cabin	private
Station Point	cabin	private
Stink Creek	cabin	private
Oliver Inlet	cabin	private
Green Cove	cabin	private

Fisheries

Admiralty Island's rivers, streams, lakes and estuaries support a variety of salmonids including Pacific salmon, trout, char, a number of nongame fresh and salt water species, several commercially important marine fish and a number of nearshore shellfish.

King Salmon (*Oncorynchus tshawytscha*). The King Salmon river in upper Seymour Canal supports the only documented run of king salmon on Admiralty Island and is unique in that it is the only wild king salmon stock that has adapted and maintained itself in an island watershed. It is the only king salmon population where intertidal spawning has been observed.

Coho Salmon (*Oncorynchus kisutch*). Coho salmon rear in most of the Admiralty streams accessible to returning adults. Escapements to most streams are small, ranging from less than one to several hundred adults. The streams draining into the Salt Lake area in Mitchell Bay support spawning runs of up to 2000 or more coho. Although returns to the Mitchell Bay system are substantial when compared with individual island streams, they account for somewhat less than half the total number of cohos returning to Admiralty Island to spawn.

Sockeye Salmon (*Oncorynchus nerka*). Sockeye are not well established on Admiralty Island because of the small number of accessible lakes which are a necessary part of their life cycle. Of the five anadromous lakes, only Kanalku supports a modest run of sockeye. Very small runs of sockeye, less than 100 fish, are found in Wilson Cove, Eliza Harbor, Hood Bay and Windfall Harbor. During peak counts in late August, several hundred sockeye have been seen entering the Kanalku Lake system.

Pink Salmon (*Oncorynchus gorbuscha*). Pink salmon spawn in all of the anadromous streams on the island. The species are ranked number one in terms of numbers of adults that return to the Admiralty streams to spawn. Pink salmon are the major commercial species of salmon harvested in Southeast Alaska. In some years commercial fishing harvest may exceed two million pink salmon returning to Admiralty streams.

Chum Salmon (*Oncorynchus keta*). Chum salmon, as with pink salmon, spawn in nearly all of Admiralty Island's anadromous streams. Chum salmon, however, are far less abundant than pinks. There are two distinct runs of chum salmon, summer and fall. In the past, summer runs were very depressed as a result of the commercial purse seine fishery for pink salmon, where chums were incidentally caught. Fall runs of chum salmon are located in Chaik, Hood and Little Pybus Bays and are associated with streams that have upwelling water in the spawning area.

Dolly Varden Char (*Salvelinus malma*). Practically all waters on Admiralty Island capable of supporting fish contain Dolly Varden. Resident Dolly Varden are found in several non-anadromous lakes and in many streams above fish barriers. Anadromous runs spawn in both lakes and non-lake systems. In addition, mixed stock populations typically overwinter in freshwater lakes and move widely between streams and marine coastlines during the summer.

Cutthroat Trout (*Salmo clarki*). Cutthroat trout are primarily found in lakes and lake fed streams on Admiralty Island although there are some small stocks in

non-lake streams. Both anadromous and non-anadromous forms of cutthroat trout exist on the island.

Rainbow Trout/Steelhead (*Salmo gairdneri*). Steelhead, the anadromous form of rainbow trout, are found in small numbers in at least 12 streams and rivers, typically in fast, rocky systems of a relatively stable nature. The best known producers are Hasselborg River, King Salmon River and Pleasant Creek. The total number of adult steelhead spawning on the island probably does not exceed 250 fish.

Following an environmental assessment, Eliza Lake was stocked with 130,000 chinook fry. Of these, 52,000 were tagged and 78,000 were untagged. As of 1989, the results of this project were still undetermined.

Wildlife

Wildlife species found on Admiralty include brown bear, Sitka black-tailed deer, river otter, mink, marten, beaver, bald eagle, seabirds, waterfowl, song birds, small mammals and marine mammals. Species on the adjacent mainland, but absent on Admiralty, are black bear, wolves, moose, mountain goat, wolverine, lynx and porcupine. There have been no known successful introductions of exotic mammals or birds to the island. Squirrels were introduced but were not successful. Recent reports of squirrel sightings on northern Admiralty have been verified. Emphasis in this report will be directed toward the species most important in management decision making.

Use of wildlife on the island are both consumptive (sport and subsistence hunting) and non-consumptive (photography/viewing). Subsistence uses include trapping furbearers for their pelts and hunting deer for the meat. Big game sport hunting includes only brown bear and deer. Non-consumptive uses are primarily photography of bald eagles and brown bear and the viewing of wildlife throughout Admiralty Island.

Brown Bear (*Ursus arctos*): Brown bear are well adapted to habitats available on Admiralty Island and at the appropriate times of the year make use of most available habitats (Johnson, 1980). A typical sequence would be the saltwater beach fringes estuarine areas in late spring/early summer; then the salmon spawning creeks and berry patch areas in the mid to late summer; and finally the timberline/alpine area over the winter where denning occurs. Based on age structure of bears taken by sport hunters, the State Fish and Game believe the brown bear populations on the Island appear to be healthy and stable.

A bear monitoring study associated with development of the Greens Creek Mine has been conducted by the Alaska Department of Fish & Game utilizing radio collars to track movement of bears on the northern part of Admiralty Island. This study has resulted in significant new information. Within the study area a census was possible and revealed a population of one bear per 0.9 square miles, the densest known population of brown bears in North America. It was also discovered that some bears remain at higher elevations all year and have no dependence on salmon as a source of food. The study has also been extrapolated to increase the population estimate for the entire island from 1000 bears, which was the historic estimate, to an estimated 1500 bears.

Sitka black-tailed deer (*Odocoileus hemionus sitkensis*): Deer numbers on Admiralty are unquantified. Deer densities on Admiralty are rated good to high, relative to other populations in Southeast Alaska. This area is the black-tailed deer's northernmost extension of their natural geographical range. Humans are

the main predators of deer on Admiralty, although the bear will occasionally take deer. The annual deer harvest is below what could be sustained, hence the real controlling factor on the population is winter kill.

Recent findings by ADF&G indicate that the high volume old growth forest is the component of the Southeast Alaska forest ecosystem that provides the best conditions of survival in the winter deer. Admiralty still has abundant acreages of high volume old growth forest (valuable as winter deer range). Admiralty also possess extensive alpine/sub-alpine areas which are utilized by deer in summer.

Bald Eagle (*Haliaeetus leucocephalus*): There are approximately 8,000 bald eagles in Southeast Alaska. Admiralty Island has the largest breeding population of bald eagles for an area of its size in North America. Eight hundred ninety-three nests were found along the island's entire 860 miles of shoreline. Throughout its range, the bald eagle is strongly associated with aquatic habitats where it feeds primarily on salmon, herring and carrion.

Upland Game Birds: Three species of upland game birds occur on Admiralty Island: Blue Grouse (*Dendragapus obscurus*); Willow Ptarmigan (*Lagopus lagopus*); and the white-tailed Ptarmigan (*Lagopus leucurus*). Other species of grouse or ptarmigan are documented on nearby islands and the mainland, but not on Admiralty Island.

Waterfowl: Breeding habitat for waterfowl in Southeast Alaska is limited by the rugged topography. While there are no major production areas, many small sedge flats at the heads of bays and on stream deltas collectively support a substantial number of birds (ADF&G, 1976). While there have been no definitive breeding duck surveys, an estimated 100,000 dabbling ducks and 10,000 diving ducks nest in Southeast Alaska (ADF&G, 1976). Approximately 60,000 Canada Geese of the Vancouver subspecies (*Branta canadensis fulva*) are year-round residents in Southeast Alaska, the population stronghold for this species (IEC, 1980). Vancouver geese are highly adapted to forest habitats (Lebeda, 1980). Mitchell Bay, Gambier Bay, Pybus Bay, and Seymour Canal have been identified as prime waterfowl wintering areas. Mitchell Bay has been identified as a wintering area for a number of Trumpeter swans.

Furbearers: The only known furbearers on Admiralty are the beaver (*Castor canadensis*), marten (*Martes americana*), weasel (*Mustela ermina*), the mink (*Mustela vison*) and river otter (*Lutra canadensis*).

Marine Mammals: Marine mammals are found throughout the coastline and bays around the island.

Humpback whales have been observed frequenting Seymour Canal during all seasons, but a significant increase in the number of whales has been documented during fall and winter. This species utilizes the abundant herring and plankton as a food source. Killer whales are occasionally observed feeding and traveling in Seymour Canal during all seasons. Harbor seals and Steller's sea lions are year-round residents. The total resident seal is not known, but 300 seals have been observed on the winter ice of Windfall Harbor. Both seal species use the shallow waters along the shoreline for feeding grounds and protection. Dall's porpoises are year-round visitors but show an increased population in winter and early spring. The Canal is perhaps an important feeding or nursery ground for the Dall's porpoise (John and Jan Straley, pers.comm.).

Threatened and Endangered Species: There are no Federally-listed threatened or endangered mammal species on Admiralty Island. Humpback whales are listed as endangered and are found in the waters surrounding the Island. Two threatened or endangered birds could potentially occur in the immediate area. These are the Aleutian subspecies of the Canada goose and the Peregrine Falcon.

Vegetation

Admiralty Island is part of the cool, very moist rain forest that extends along the Pacific coast from northern California to Cook Inlet. Admiralty is typical of the three large islands of northern southeast. Most of Admiralty's forest is old-growth. It generally extends from sea level to an altitude of about 3,000 feet in the south and to 2,500 feet farther north.

Its forest is composed primarily of Western hemlock and Sitka spruce with a scattering of Yellow cedar and Mountain hemlock. Sitka alder is common along streams, beach fringes and on soils recently disturbed by logging and landslides.

Blueberries, huckleberry, and devils club are abundant shrubs in these forests. Because of the high rainfall and resulting high humidity, mosses grown in great profusion on the ground, on fallen logs, on the lower branches of trees and in forest openings.

Interspersed throughout the forest are muskeg, or bog plant communities, dominated by sphagnum mosses and sedges. These openings also support low shrubs, forbs, and a few scattered hemlocks and lodgepole pines. Muskegs vary greatly in size from small pockets where drainage has been retarded to broad expanses. Muskeg may even occur on fairly steep slopes. The underlying substrate is highly organic and ranges from about 1.5 feet to 40 feet thick. These openings create variety in the unbroken coastal forest and add to its value as wildlife habitat. Shrubs growing at the edge between the forest and muskeg provide further habitat variety.

The alpine tundra usually lies above 2,500 to 3,000 feet. Thus it occupies the region above the coastal forest and is separated from the forest by a subalpine or transition zone. Soils are generally thin, but gravelly and stony organic soils may form locally in depressions. Snow remains in some glacial basins year-round, particularly on north-facing slopes. Resident plants have adapted to snowpack and wind abrasion by evolving low growth forms. Low, mat-forming vegetation covers most of the tundra and cushion-like plants occupy crevices on exposed rock outcrops and talus slopes.

SOCIAL ENVIRONMENT

Wilderness

Admiralty is a large and primarily remote island wilderness where man has had little impact on the land. The area supports a full range of life zones, from the estuarine to the alpine. Admiralty is renowned for its old growth spruce and hemlock forest and is internationally known for its population of brown bears. In fact, Admiralty is referred to as "Fortress of the Bears."

One of the prime attractions of Admiralty is an inland lake chain that is connected by portages called the Cross Admiralty Canoe Route. This route goes from Mole Harbor to Mitchell Bay with side trips to other lakes.

Visitors to Admiralty should expect a very low frequency of encounters with other parties. A great deal of use takes place in saltwater adjacent to the wilderness

where fishing, sightseeing, etc. occur. Despite the presence of boats and aircraft, Admiralty remains a high quality wilderness experience.

Recreation

Public Facilities: There are 12 public recreation cabins and 10 shelters on Admiralty Island. The cabins range in construction from logs dating back to the days of the CCC, to A-frame, to pre-fabricated Pan-Abode style kits. The cabins are part of a reservation system and can be rented for 15 dollars per night. Two cabins are located on saltwater (Pybus Bay, Church Bight in Gambier Bay) with the rest found on freshwater lakes. The cabins on the lakes have a boat available for use at no extra charge.

There are also 10 three-sided shelters built by the CCC. These shelters are available at no charge on a first-come, first-serve basis. Two of the shelters (North Thayer Lake and North Hasselborg Lake) are in disrepair.

Table Number
CABINS AND SHELTERS

Site Name	Location	Capacity (PAOT)
Big Shaheen (cabin)	Hasselborg Lake	8
Church Bight (cabin)	Gambier Bay	6
Distin Lake (cabin)	Distin Lake	4
East Florence Lake (cabin)	Florence Lake	4
Hasselborg River (cabin)	Hasselborg Lake	3
Jims Lake (cabin)	Jims Lake	5
Lake Alexander (cabin)	Lake Alexander	5
Lake Kathleen (cabin)	Lake Kathleen	5
Little Shaheen (cabin)	Hasselborg Lake	5
Pybus Bay (cabin)	Pybus Bay	6
Sportsmen Camp (cabin)	Distin Lake	5
West Florence Lake (cabin)	Florence Lake	6
Davidson Lake (shelter)	Davidson Lake	4
Guerin Lake (shelter)	Guerin Lake	4
Hasselborg Lake (shelter)	Hasselborg Lake	4
Lake Alexander (shelter)	Lake Alexander	4
Mitchell Bay (shelter)	Mitchell Bay	4
Mole Harbor (shelter)	Mole Harbor	4
N. Hasselborg Lake (shelter)	Hasselborg Lake	4
N. Thayer Lake (shelter)	Thayer Lake	4
Swan Lake (shelter)	Swan Lake	4
Windfall Harbor (shelter)	Windfall Harbor	4

Trails: There are 13 trails within the Wilderness totalling 21.6 miles. The majority of these trails are located in the center of the island and are part of the Cross Admiralty Canoe Route that was originally constructed by the CCC during the 1930's. Several of the trails have portions of treated plank through wet spots or muskeg while other trails utilize native materials to create "puncheon" over wet spots. All the trails are maintained on a yearly basis with those on the Canoe Route receiving the heaviest maintenance.

Table Number XX

TRAILS

Trail Name	Trail Number	Miles
Beaver Lake - Hasselborg Lake	492	0.2
Davidson Lake - Mitchell Bay	516	4.0
Distin Lake - Davidson Lake	468	0.2
Distin Lake - Thayer Lake	470	3.0
Florence Lake - Saltwater	561	1.1
Guerin Lake - Distin Lake	493	0.3
Hasselborg River Trail	490	1.4
Hasselborg Lake - Guerin Lake	485	2.1
Kanalku Lake Trail	539	1.3
McKinney Lake Trail	512	0.8
Mole Harbor - Lake Alexander	517	2.3
Pack Creek Trail	529	1.0
Thayer Lake Trail	476	3.9
Total Trail Miles		21.6

Commercial Operations: There are two commercial visitor services that were operating on Admiralty prior to the signing of ANILCA in 1980. They are Alaska Discovery which operates canoe trips and Thayer Lake Lodge. Since 1980, several other outfitter/guides have been operating on Admiralty. A total of three outfitter/guides are directly under permit to AINMW and three operate on the Island but their permits are administered by other Forest Service areas. Most of the outfitter/guides who visit Admiralty come by boat with anywhere from 3-12 clients although one outfitter/guide carries up to 90 passengers.

Outfitter/guide use for the peak season at Pack Creek (July 10 - August 25) was awarded through a competitive process that will remain in effect through 1991. Only successful applicants can visit Pack Creek during this time period. Four small boat operators capable of carrying no more than 20 passengers, one canoe/kayak outfitter/guide and one outfitter/guide using float planes were awarded use.

Dispersed Use: Because of its central location within the northern portion of the Tongass and due to its extremely high fish and wildlife values, Admiralty is a destination area for dispersed recreation use originating from many different communities.

Residents of Angoon rely upon Admiralty for recreational and subsistence activities, with particular intensive use of Mitchell Bay, Favorite Bay and Hood Bay. The Mansfield Peninsula and northeastern part of the Island on Stephens Passage is perhaps the most popular destination for small boat users from Juneau and afford consistently good opportunities for fall hunting. Gambier Bay, Pybus Bay and protected harbors within the Point Gardiner area are used primarily by recreationists from Wrangell, Sitka, and especially Kake and Petersburg. Hunting, fishing, boating, and beach-oriented activities predominate. The Seymour Canal and Admiralty Lakes areas of the island support high use, primarily in the form of fishing, kayaking and canoeing in connection with the Cross Admiralty Canoe Route from Mole Harbor to Mitchell Bay. Fishing, hunting, photography, boating, hiking, picnicking, camping and nature study are the most popular activities.

Recreation Opportunity Spectrum (ROS)

Table Number XX

RECREATION OPPORTUNITY SPECTRUM

ROS Class	Acres	% of Total Area
Primitive I (PI)	559,500	58
Primitive II (PII)	220,400	23
Semi-Primitive Non-Motorized (SPNM)	20,800	2
Semi-Primitive Motorized (SPM)	159,200	17
Roaded Natural (RN)	2,400	>1
Roaded Modified (RM)	1,800	>1
Rural (R)	200	>1

Access: Since Admiralty is an island, access is limited to aircraft and boat use. Most of the people who visit Admiralty arrive by float plane and small boat. Ferry service is available to Angoon. Visitors using small boats can access Seymour Canal, a popular area for hunting, fishing, kayaking and sightseeing, easily by crossing the tram at Oliver Inlet State Marine Park. Larger boats must make the longer trip around the Glass Peninsula to visit Seymour Canal.

Pre-ANILCA Helicopter Use: Scoping with Juneau-based helicopter companies indicates helicopter use on Admiralty that predates ANILCA has taken place in a variety of "zones," rather than specific landing sites. For use to be included it must be: prior to 1980; "on a more or less regular basis;" and cannot include administrative flights (USFS, USGS, ADF&G, etc.). This use will need to be verified.

ERA Helicopters: Most of ERA Helicopters' use has been timber or mining related. Their use is listed below:

Table Number XX

REPORTED HELICOPTER USE ON ADMIRALTY

Location	Purpose
Pybus Bay	base camp in Pybus Bay with mineral exploration all over southern Admiralty.
Gambier Bay (North Arm)	base camp in Gambier Bay with mineral exploration all over southern Admiralty.
Wheeler Creek	Alascom communication sites.
Cube Cove	timber
Lake Kathleen	Mineral exploration for Pyrola claim. Actual landing site at USFS cabin and at claim site.

Temsco Helicopters: Temsco has operated extensively throughout Admiralty. The general landing locations have been divided into light, medium and heavy use designations. Heavy use is defined as 5-25 helicopter trips/year, moderate use is 1-5 trips/year, and light use is at least one trip every other year.

Location	Purpose	Type of Use
Pack Creek	wildlife observation, homestead support, recreation	heavy
Oliver Inlet	fishing, recreation, USFS cabin dropoffs	heavy
Wheeler Creek	fishing, recreation, supporting cabins in the area	moderate
Lake Kathleen drainage	prospecting, recreation	moderate
King Salmon River	fishing, recreation	moderate
Central Admiralty Island ridges	wildlife observation, recreation photography, filming	moderate
Windfall Harbor	fishing, recreation	moderate
Mole Harbor	fishing, cabin drop-offs, trip support	moderate
Mitchell Bay	fishing, cabin support, recreation	moderate
Gambier Bay	"	"
Pybus Bay	"	"
Peanut Lake	fishing, recreation, FS cabin dropoffs	moderate
Lake Kathleen	"	"
Lake Florence	"	"
Thayer Lake	"	"
Hasselborg Lake	"	"
Distin Lake	"	"
Guerin Lake	"	"
McKinney Lake	"	"
Beaver Lake	"	"
Eliza Harbor	recreation	light
Herring Bay	"	"
Chaik Bay	"	"
Hood Bay	"	"
Tyee Harbor	"	"

Recreation Use: Visitor use records at specific sites like Mitchell Bay and Pack Creek are derived from systematic and season-long monitoring by wilderness rangers. However, due to Admiralty Island's large size and remoteness, accurate visitor use of the entire island is difficult to ascertain and should be viewed as a "best guess." The numbers in the table below are expressed in Recreational Visitor Days (RVD's) with one visitor day representing one visitor recreating for 12 hours.

Table Number XX
RECREATION VISITOR DAYS

1988	293,400 RVD's
1987	293,400 RVD's
1986	150,700 RVD's
1985	318,700 RVD's
1984	148,400 RVD'S

Cultural Resources

Admiralty Island contains a diversity of cultural resources documenting an extensive period of time. The antiquity of human occupation on the Island is not known, but could approach 10,000 years if recent evidence obtained elsewhere in Southeast Alaska applies to Admiralty. It is known that many generations of Tlingit Indians and earlier prehistoric people used the land and its resources for sustenance.

Knowledge of the resources is sketchy. Few areas of the Monument (less than one percent of the land area) have been inventoried for cultural resources. Resources representing late prehistoric and historic (the last 200 years) occupation of the area are most common. An accurate prediction of the total resource base is impossible because of the extremely limited amount of data available.

Eighty-five cultural sites are formally recorded on the Alaska Heritage Resource Survey for Admiralty Island. These include sites of aboriginal, non-aboriginal, and mixed origin: villages, fish camps, forts, burials, cemeteries, petroglyphs, pictographs, tribal houses, rock shelters, middens, landmarks, churches, canneries and whaling stations. A large variety of sites, while not formally recorded on the Survey, are also known including fox farms, homesteads, cabins, mines, legend sites, named places, grounded barges, fish traps, CCC shelters, and remnants of other historical uses.

Large scale development activities have not, for the most part, destroyed the Monument's cultural resources. The main threats to the integrity of cultural remains on Admiralty are decay through natural processes and vandalism.

Visual Resources

The visual character type of this wilderness is Admiralty-Chichagof. For the most part landforms in this area are generally rounded. Notable exceptions exist, however, especially on the north portions of Admiralty where mountainous terrain tends to be rugged and snow covered most of the year. Mountain elevations vary from 3000-4700 feet on Admiralty.

Saltwater bays and estuaries are numerous and exhibit much variety, from small sheltered coves to large exposed forms. Often dramatic high energy seas occur at the south tip of Admiralty Island.

The majority (95%) of this wilderness is in Existing Visual Condition (EVC) 1: these areas appear to be untouched by human activity. Two percent is in EVC 4, which are areas in which changes in the landscape are easily noticed by the average person and may attract some attention. About 1.5 percent is in EVC 3.

Subsistence

Subsistence use on Admiralty varies greatly depending on the proximity of communities, desired subsistence items and time of the year. Angoon is the only town on Admiralty and the people of Angoon rely very heavily on resources in the immediate area. Deer, fish, shellfish, seals and intertidal species are the

primary subsistence resources. Coho salmon are obtained from the Salt Lake area and sockeye salmon from the Kanalku Bay area. Major areas also utilized are Mitchell Bay, Chaik Bay and Hood Bay.

The people of Kake and Petersburg have traditional ties to the southern portion of Admiralty Island and they utilize Gambier Bay, Pybus Bay and other nearby areas to obtain subsistence items.

Scientific Values

A primary purpose for the establishment of national monuments is for the protection of objects of scientific interest. Admiralty has long been the focus of scientific research and recognized for its scientific values. Since the 1930's, Pack Creek has been closed to bear hunting and later in the 1950's been designated a Research Natural Area. Numerous studies of the wildlife including deer, bear and Canada Geese have been performed with several still currently underway. Agencies such as the Alaska Department of Fish and Game, Forest Service, USGS as well as universities perform research on the flora and fauna of the island. Because of its relatively pristine condition, Admiralty acts as a "control" in comparison to other, more developed areas.

(INSERT MAP OF ADMIRALTY ISLAND NMW HERE)

CORONATION ISLAND
WILDERNESS

ADMINISTRATIVE FACTORS

Location Coronation Island is located about 18 miles of the northwest coast of Prince-of-Wales Island, and just south of Kuiu Island. This area is 110 miles by air from Ketchikan. The nearest full-service community is Craig which is about 40 miles by air to the southeast. This wilderness is located on the Thorne Bay Ranger District. A full legal description of this area is on file at the Thorne Bay Ranger District, Thorne Bay, Alaska.

Coronation Island Wilderness is located entirely within VCU # 564.

Administrative
Facilities

No administrative facilities are present in this Wilderness. This Wilderness is administered from the Thorne Bay Ranger District office in Thorne Bay, Alaska.

PHYSICAL
ENVIRONMENT

Geography This island is characterized by steep, rock-faced, rugged headlands that are exposed to the open ocean. Several distinct bays penetrate this island. Elevations range up to almost 1800 feet, and ridge tops are predominantly rounded.

Climate Maritime weather dominates this island Wilderness as it does most of Southeast Alaska. Normal temperatures range from the 40's to mid-60's F. in summer, and from the high teens to low 40's F. in winter.

Storms and moderate to heavy precipitation occur throughout the year, although storms are most frequent and precipitation is heaviest from September through November. In winter, because of the island's location on the outer coast, snowfall accumulations usually no very heavy.

Surface winds are moderate to strong throughout Southeast Alaska. Prevailing winds generally blow from the south or southeast, except where local topography influences wind direction.

Air Air quality in this area is very good. There are no sources of pollution anywhere near this Wilderness.

Fire The incidence of forest fires in the Coronation Island Wilderness is extremely low. Summer rainfall and the relative infrequency of summer electrical storms are major factors in the low wildfire potential. Wildfires are generally man-caused and due to escaped campfires.

Minerals Due to the remoteness of the area, the rugged terrain, and the abundant vegetation, little mineral exploration has occurred. The only reported mineral discovery in this area was made by a group of sailors in 1900. After being driven into Egg Harbor on the northwest end of Coronation Island, they found galena (lead sulphide) floatibg on the west shore. Development of this deposit

consisted of driving 782 feet of adits and shipment of 100 tons of ore (Wright & Wright, 1908).

Water Quality

There are no major stream systems on the island and only a few short individual stream channels, all with small, steep watersheds. The water quality in these streams are expected to be good. No development activity has taken place in this area in the recent past that would affect water quality.

Soils

(No report on specific soils of Coronation Island available)

Lands

All the land on this island is National Forest. However there is a 125 acre Coast Guard Lighthouse Reserve on Spanish Island. This reserve was withdrawn February 13, 1981, under Executive Order 3406.

A memorandum of Understanding between the Forest Service and the Coast Guard authorizes a lighted navigational aid at Helm Point on Coronation Island and provides for coordination between the two agencies in management of Coast Guard withdrawals such as the Spanish Island Lighthouse Reserve.

One special use permit is in effect in this area. This is a permit to the Alaska Department of Fish and Game for a cabin and outhouse at Egg Harbor to operate a research station. This permit expires on December 31, 1996 with the stipulation that a new permit may then be issued.

There were no documented or known temporary facilities for the taking of fish and wildlife existing before 1980.

BIOLOGICAL ENVIRONMENT

Fisheries

One catalogued anadromous stream has been identified. Each of these streams has small, steep watersheds and appear to have only limited habitat for anadromous fisheries.

The only fish species documented on this island are pink salmon. (Alaska Department of Fish and Game, 1982). These streams may also contain populations of Dolly Varden char, cutthroat trout, and chum salmon, but this has not been documented. No threatened or endangered fish species have been found in this area (USDA Forest Service, 1983).

Because of the limited amount of habitat available and the limited access, sport fishing on this Island is minimal. There is no documented subsistence fishing use within the area.

Abalone, clams, mussels, and other shellfish are found in the intertidal zones adjacent to the island. Populations of these species have not been documented. There is probably some personal use of the intertidal shellfish, especially abalone, but this use appears to be minimal.

There are no existing or planned fish enhancement or aquaculture projects within the area (Southern Southeast Regional Planning Team, 1982)

Wildlife

This island supports a wide variety of birds, land mammals, and sea mammals typical to Southeast Alaska.

Several areas on Coronation Island are important seabird nesting areas. At least twelve species of nesting seabirds have been documented as present or probable in this area (Sowls, et al, 1982). The island is also used by bald eagles. The Peal's subspecies of Peregrine falcons has been sighted on Coronation Island.

Sea mammals present include harbor seals, sea lions, sea otters, and whales. Heavy concentrations of harbor seals are found around the northeast corner of Coronation Island. There are documented sea lion haul out sites on the unnamed island off the north coast of Coronation Island (Klinkhart, 1978; LeResche and Hinman, 1973). Sea otters have been introduced in the Sitka and Craig areas and are now found throughout the area. The largest populations are found in the Spanish Islands. Humpback whales and minke whales have also been documented around Coronation Island.

A recent study of wildlife populations on Coronation Island found good populations of deer, mink, and river otter (Land and Young, 1984). Land otter sign was rare. Timber wolves were introduced to Coronation Island in 1960 (Merriam, 1966), but they are no longer present on the island. Black bear and marten are also absent.

Conspicuous land mammals include Sitka black-tailed deer, black bear, wolf, mink, marten, and land otter. A unique species of vole, known as the Coronation Island Vole (Microtus coronarius) exists on the island.

Coronation Island was closed to all hunting and trapping since the beginning of the deer-wolf relationship study in 1960; however, ADF&G has recommended reopening both the hunting and trapping seasons in this (Land and Young, 1984).

No known threatened or endangered wildlife species occur within this area. (Metzger, 1983).

Vegetation

The vegetation of the islands is typical of the outer coastal islands in the Alexander Archipelago: Sitka spruce, western hemlock, western redcedar and Alaska yellow-cedar with their associate understory species.

There are no known threatened or endangered vegetation species nor are any expected to be found (Helmuth and Fischer, 1983).

SOCIAL ENVIRONMENT

Wilderness

Coronation Island has high wilderness values based on the following four criteria.

- a. **Natural integrity** is high due to the fact that this island stands by itself and is surrounded generally by vast areas of saltwater.
- b. **Apparent naturalness** is high due to the fact that the landscape has remained unaltered by human activity.
- c. **The opportunity for solitude** is high due to the remoteness of the island and the difficulty of access.

Recreation

d. The opportunity of primitive recreation is high due to the high level of solitude one would experience and the unique scenic and recreation attractions of the area.

Public Facilities

There are no existing developed recreation facilities in the area.

Trails

There are no developed trails in the area

Commercial

There are no known commercial services being offered at this time to this area. There were no documented or known visitor services existing before 1980.

Dispersed Use

This island receives low use due to its inaccessibility. Flights to the island are rare. The coves are subject to treacherous winds during storms and many boats have been sunk there. Coronation Island provides a spectacular setting and abundant wildlife, yet it is also not very accessible.

Secure anchorage is a problem on Coronation Island. The best north facing anchorages are located in Egg Harbor, Alikula Bay, and the east arm of Aats Bay. None of these anchorages are secure due to "wiliwaws." Egg Harbor provides the best combination of good anchorage and freshwater supply.

Other anchorages are located at Windy Bay (west facing), China Cove (south facing), and one small anchorage near Shrub Inlet (north facing). These anchorages are also dangerous in certain wind and sea conditions.

The many coves, peaks, and seabird nesting cliffs provide an opportunity for some type of trail system. A more complete inventory of trail opportunities for Coronation and Warren Islands is available in Hummel, 1983. Some possible features within the Coronation Wilderness which could be accessed by trail include:

1. Egg Harbor/Alikula Bay - within one-quarter mile of one another. Egg Harbor has some mining ruins, a beach, a stream outlet, and caves. Alikula Bay also has a beach, but no other attractions. It is an easy walk from Egg Harbor.
2. Pin Peak - near Egg Harbor, exposed rock summit, and good views.
3. Windy Peak - above Windy Bay, some view potential.
4. Needle Peak - tallest, most centrally located, open alpine and subalpine vegetation, varied topography, and excellent views.
5. Windy Bay - has a gravel beach and stream outlet.
6. Aats Bay - large bay separated into two arms, with beaches and streams at the head of each. The east arm is a better anchorage than the west arm.

7. Helm Point - described as "perhaps the most conspicuous and prominent headland in Southeastern Alaska" (U.S. Coast Pilot #8, 1984) - a spectacular headland and sea-bird nesting area with large sea caves.

In summary, Coronation Island has many wilderness attractions, but also many dangers, particularly for boaters. This island provides outstanding opportunities for solitude, nature study in an unmodified environment, and other primitive outdoor recreation experiences on days when weather permits access.

Recreation Opportunity Spectrum

Because of the lack of any development on this island and its distance from any populated areas and its exposure to the open Pacific Ocean, all this 19,100 acres of this area is inventoried as Primitive I.

The GIS recreation data base displays in more detail the Recreation Opportunity Spectrum classes and the key recreation areas and sites in this Wilderness.

Access

Access to this area is by aircraft and boat. Because of the large expanse of open, exposed saltwater, safe boat access would require larger motorized craft. There are no known pre-ANILCA helicopter landing sites.

Recreation Use

It is estimated that recreation use on Coronation Island has averaged no more than 200 recreation visitor days over the last five years. All of this has been dispersed recreation use.

Cultural Resources

Reported cultural resources and prior land use of Coronation Island include the following: Sites at the head of Alikula, Windy, Aats, and Gish Bays and at the head of Egg Harbor; and a lead mine along the west shore of Egg Harbor (Wright and Wright 1908). Moreover, Lt. Commander A.S. Snow, who named most of the bays indenting Coronation Island in 1886, reported that the Tlingit people would camp at Egg Harbor while awaiting fair conditions to allow travelling to the Hazy Islands, where they would gather birds eggs (Orth 1967). He also stated that Aats was the Tlingit name for the bay presently bearing that name (ibid.).

This information indicates that the Coronation wilderness area was utilized traditionally on at least a seasonal basis. In addition to the activities mentioned above, the people could have fished for bottom fish and possibly for salmon (though the preferred method for catching the latter was to entrap them in weirs; and no major salmon streams or weirs are reported on any of these islands); hunted sea-otter and trapped fur bearers; hunted sea lions and seals; gathered seaweed (and one of the preferred kinds grows only where there is constant tidal surge); gathered abalone and gumboots; picked berries and gathered other edible flora; and built forts for defense against enemy groups. After contact with Europeans, people may well have developed garden spots near their traditional use areas.

In regard to archeological surveys, two have been conducted in the area. The first occurred in 1974, the objective being to identify on-the-ground those sites reported to be of significance to the Native people (Sealaska 1975). Ultimately, although several hundred sites were identified in the Ketchikan Area alone, only a fraction were deemed important enough for selection as Historic and Cemetery Sites under Section 14(h)(1) of the Alaska Native Claims Settlement Act. None of the selected sites are located on Coronation Island.

The second archeological survey was conducted from June 20-21, 1983, by the Forest Service and was a low level reconnaissance, the sole purpose of which was to identify the presence of obvious sites. A limited number of surveys were conducted on Coronation Island at the heads of most of the major bays; and of the caves along the west shore of Egg Harbor. The heads of Windy Bay, Egg Harbor, Alikula Bay, and the west arm of Aats Bay were checked on the ground. Time constraints precluded surveying Gish Bay and the east arm of Aats Harbor.

Interestingly, worked trees ("pitch" spruce trees) were discovered along each shoreline, although no obvious subsurface site was discovered. One cannot rule out, however, the possibility that such remains may exist which could be found through the employment of more systematic survey techniques.

Lead was mined from Coronation Island within the first decade of the twentieth century (Wright and Wright 1908). According to the Wright and Wright area map, this development occurred on the west shore of Egg Harbor where some caves are located. Mining there continued, though probably on a sporadic basis, through the 1960's. At present, one cave has rejected cores littering the floor, and clearly tunneling had occurred in the wall opposite its entrance for extracting the material. In the northern cave, there is a wooden water trough or sluice box. These areas are tentatively assigned an AHRS number, CRG-169 (Rabich-Campbell, 1983).

Visual Resource

No formal visual resource inventory has been completed for this wilderness area, though extensive informal surveys have been conducted in the area in the past.

This area is part of the Kupreanof Lowlands character type which is characterized by generally low, rolling terrain, elevations seldom greater than 1500 feet, and numerous island groups, and intricate waterways. The rugged headlands, steep cliffs, and prominent bays would make much of the western and southern coast of this area a Variety Class A. These are the outstanding scenic features of this island. The rest of this island would be rated a Variety Class B. Other outstanding scenic features are the broad, gravelly and grassy beach areas at the head of Egg Harbor and Alikula Bay and the picturesque stand of old windblown and weathered Sitka Spruce behind these beaches.

Because this is a classified Wilderness, the inventoried visual quality objective for the entire area is Preservation which generally permits only small scale, low visual impact recreation facilities.

Subsistence

There is no documented subsistence use in this area.

Scientific Values

In the past few years it has been discovered that there is an extensive system of limestone caves on this island. They have been observed near the summits of several peaks as well as along the shores of some of the bays. Interest in further research into this resource is increasing. Other geologic research of

interest includes studying coastal geomorphology (the history of different shoreline elevations and their causes), and the effects of past glaciations.

(INSERT MAP OF CORONATION ISLAND WILDERNESS HERE)

ENDICOTT RIVER
WILDERNESS

ADMINISTRATIVE FACTORS

Location This 98,729 acre wilderness area is located on the west side of Lynn Canal, 45 miles northwest of Juneau and 30 miles south of Haines, Alaska. Its western boundary is Glacier National Park and its eastern boundary is approximately 2-3 miles west of and parallel to Lynn Canal. The north and south boundaries are defined as watershed boundaries. The area is designated within the Tongass Land Management Plan (TLMP) as Management Area C-16 and is composed of Value Comparison Units (VCU's) 101 through 105 and part of 107. The Endicott Wilderness is located entirely on the Juneau Ranger District, Chatham Area, Tongass National Forest. A complete legal description is on file at the Juneau Ranger District office in Juneau, Alaska.

Administrative Endicott Wilderness is administered out of the Juneau Ranger District office in Juneau. There are no administrative facilities in the Wilderness.

PHYSICAL ENVIRONMENT

Geography The Endicott River is the central feature of the wilderness and flows easterly through a deep glacially carved river canyon. The area is recently glaciated and contains many glacier features, including glacial cirques (natural amphitheaters) and tarns (small mountain lakes or ponds). The side walls of many of the valleys have been scoured by ice sheets, and bedrock outcroppings are common throughout the area. The headstreams for the river find their source on the broad, brush-covered flats and the glacier slopes of the Chilkat Mountain Range. The mountain peaks are often snow covered and reach an elevation of 5,280 feet near Mount Young. A unique topographic feature is Endicott Gap, a pass 900 feet in elevation that accesses Adams Inlet in Glacier Bay National Park. A unique area in Endicott River is the broad valley near Endicott Pass. This valley is approximately 5-1/2 square miles with very young vegetation.

Climate Maritime weather dominates Southeast Alaska. Normal temperatures range from 40 to mid-60 degrees Fahrenheit in summer, and from the high teens to low 40 degrees Fahrenheit in winter. In summer, cooler temperatures occur on or near the outer coasts while warmer temperatures prevail further inland. In winter, the reverse is true. Extreme temperatures occur in both winter and summer when air masses from Canada override the coastal mountains, bringing clear skies and continental air to the archipelago.

Storms and moderate-to-heavy precipitation occur throughout the year, although storms are most frequent and precipitation is heaviest from September through November. In winter, snow falls frequently throughout the region and accumulations of 60 to 100 inches or more are not uncommon. At higher elevations more than 200 inches of snow may fall and accumulate each year.

Surface winds are moderate to strong throughout Southeast Alaska. Prevailing winds generally blow from the south or southeast, except where local topography influences wind direction. Certain conditions of temperature and pressure gradient may also substantially increase winter wind velocities.

Air Air quality in the Endicott River Wilderness is generally very good. There are relatively few major emissions sources in the region, and pollutants are rapidly dispersed by winds and removed by precipitation. Air quality in the state is regulated by the Alaska Department of Environmental Conservation.

Fire The incidence of forest fires in the Endicott River Wilderness is extremely low. Summer rainfall, infrequency of electrical storms, and small numbers of visitors account for the low wildfire potential. Recorded wildfires have been due to escaped campfires.

Minerals The mineral character of the area is not well documented in comparison to other areas of Southeast Alaska such as the Juneau Goldbelt. Historically many claims have been filed and explored in the area with some of the first claims recorded around 1920. Historic claims and past activity have been located at the broad valley near Endicott Pass, upstream from Endicott Lake (30 lode claims were on file until 1976), east side of Youngs Mountain, the first main tributary on the north side of Endicott River, and along the northern boundary of the wilderness area.

Value Comparison Units 101, 102, 103, and 104, are located in a geologic region that is not favorable for metallic and related nonmetallic deposits. Existing data and geologic criteria indicate that this region has poor potential for lode type mineral deposits. Value Comparison Unit 105 is located in a geologically highly favorable region for metallic and related non-metallic deposits. Placer occurrences of platinum and chromite could exist in abundance.

Current Status of Claims: The Endicott River area was initially withdrawn from entry under the Mining and Mineral Leasing Laws in December of 1978 by the Secretary of Agriculture under the authority of the Forest Land Policy and Management Act of 1976. The area remained withdrawn until ANILCA was passed in December 1980 designating the area Wilderness. Under provisions in the Wilderness Act the area was reopened for mineral location until December 31, 1983.

Recent exploration in the area (last 20 years) have included geologic mapping, seismic work, and claimstaking. No Plans of Operations are currently on file. Activities on the other claims are not known. There are currently nine mining claims filed with the BLM within the Wilderness Area.

Water Quality The wilderness area has had limited mineral activity and very little dispersed recreation. With the exception of a few small streams near recent mineral activity it is generally thought that past activities did not significantly alter or cause long lasting water quality degradation. Hence, overall the water quality is expected to be high.

In most cases, the water use classification to be managed for is, as defined by Alaska State Water Quality Standards, "Growth and Propagation of Fish, Shellfish, Other Aquatic Life and Wildlife Including Waterfowl and Furbearers", hereinafter referred to as ADEC's Standard C.

Most streams in the area have very high gradients beginning at alpine to the valley floor. Cascading waterfalls emptying directly into the Endicott River are common and contribute significantly to the scenic values of the area.

Streams within the area are of both glacial and non-glacial origin. Sediment laden glacial streams give Endicott River a milky appearance during the summer months.

Soils

Shallow mineral soils (less than four feet thick) on steep V-notch dissected sideslopes are common in the area. Small areas of organic soils (muskegs) occur on infrequent benches and at sub-alpine elevations. Of concern are soils and vegetation occurring on recently deglaciated areas. These soils are very fragile where slight disturbance can eliminate or delay the vegetative succession.

Lands

This wilderness area is little disturbed and does not contain any lands in private ownership. Uses of the National Forest have centered principally around recreational pursuits. At least one unimproved landing strip and one private hunter cabin are reported to exist in the upper reaches of the area. These improvements have been developed without Forest Service authorization and their extent of use is not known. Lower reaches of the Endicott River are used by airboats and jetboats, principally for hunting access. The City of Haines is interested in developing the Endicott River for hydroelectric power, however, no formal proposals have been developed.

Hydroelectric: The main stem of the Endicott River was designated as a powersite withdrawal in 1923. The Alaska Power Administration has indicated that the size and cost of its development are not feasible. No detailed studies or development proposals have been made.

BIOLOGICAL ENVIRONMENT Fisheries

The main stem of the Endicott River (ADF&G No. 115-10-80) is approximately 24 miles long with 20 tributaries ranging from one to 10 miles apiece. Due to the effects of five glaciers that occur within the watershed, the river has an opaque coloration most of the year

The majority of the anadromous fish spawning habitat occurs within the lower 7.5 miles of the Endicott River with the remainder located in the estuary. The riverine spawning habitat is of very high value due to its low gradient, multiple channels, bottom composition, and accessibility to fish; although the glacier's till and cold water may have a negative influence which counteracts the positive attributes of the channel type. The average escapement (the number of fish that return to the stream) for pink salmon is 127 fish and for chum salmon 1,993 fish. The channel type in this section of the river is also important for rearing coho fry.

From mile 7.5 to mile 15, the river travels through a steep walled canyon. Within the canyon is at least one waterfall which is a complete barrier to anadromous fish. At this time, the total number and heights of waterfalls in the canyon is not known. Reportedly, jetboats are able to navigate the river from the mouth to the first barrier fall.

From 15 to 23 mile, the river is of low gradient and flows through a large open valley. Some sections of the stream contain multiple channels as a result of poor bank stability and periodic flushes by large quantities of water. If anadromous fish had access to this section of stream, they would find highly suitable spawning habitat. At the present time, probably only resident Dolly Varden utilize this channel type.

Endicott Lake is between mile 23 and mile 24. The lake is about 50 acres and is usually opaque colored due to the presence of a glacier on one of the feeder

streams. It is not known if resident fish occur in the lake. The lake has been identified by ADF&G as a candidate for an enhancement potential review.

Within the Lynn Canal area, the Endicott River is not noted as a major contributor of fish to the commercial market.

In future years, if the road to Haines is constructed and crosses the mouth of the Endicott River, there may be an increase in the number of sport and subsistence users for the fish which occur in the lower section of the stream.

Wildlife

Mountain goats, moose, bear, and wolves are the wildlife species of most general interest in this wilderness area. There are, however, a number of other species typical of Southeast Alaska which expand the wildlife diversity found here. Winter snowfall is typically heavy, limiting the abundance of many species including Sitka black-tailed deer. Mountain goats are found in the rugged upper reaches of this area and have in the past, been present in greater numbers than can be found today. These goats, as well as moose, regularly cross from Glacier Bay National Monument to the Endicott Wilderness through Adams Pass. No threatened or endangered animals are known to occur within the wilderness.

In future years, if the road to Haines is constructed and crosses the mouth of the Endicott River, there may be an increase in the number of sport and subsistence users for the wildlife which occur in the lower section of the stream.

Vegetation

The flora of this wilderness represents communities common to mainland Southeast Alaska. Plant communities range from the lower reaches of Endicott River to alpine peaks and are recently deglaciated in many areas. This fact makes many sites in the wilderness suitable for colonization by plants which require early succession sites. Some of these plants are relatively uncommon to most Southeast Alaska communities. Due to its glacial history, the area also houses plant communities of various ages and stages of development. No threatened, endangered, or sensitive plant species are known to occur within the wilderness.

The valley floor is interspersed with spruce-hemlock rain forest typical of Southeast Alaska and contains frequently scoured, well drained alluvial deposits supporting willow and alder near Endicott Gap.

SOCIAL ENVIRONMENT

The Endicott River drainage is remote and used very little. Lynn Canal is a major water transportation route for both recreational and non-recreational boaters. One area was clearcut in 1966 just east of the wilderness boundary on the north shore of the Endicott River. Roads in this area are overgrown with alder. This area is used to some extent for inland access.

Wilderness

The Endicott Wilderness is the only Chatham Area wilderness with a significant riverine area. It also shares a boundary with Glacier Bay National Park. Two features of interest are Endicott Gap at an altitude of 900 feet which provides access to Adams Inlet in Glacier Bay National Park and a broad valley near Endicott Pass that is five and one-half square miles.

Recreation

Public facilities: There are no facilities or trails in this wilderness area.

Commercial: No outfitter/guide permits have been issued for the area. However, some occasional guided hunting occurs in the area.

Dispersed Use: Dispersed recreational opportunities are generally limited to moose and bear hunting in the lower watershed area utilizing boat and plane access and moose and mountain goat hunting the upper watershed area utilizing airplane access. Some hiking, camping and sport fishing may occur in the lower watershed.

Recreation Opportunity Spectrum (ROS): The Recreation Opportunity Spectrum (ROS) inventory system provides a framework to manage land and water resources by providing an understanding of the dynamic nature of the recreation resource and the complexity of its management. The ROS classes provide a range of different physical and social circumstances which lead to different recreation activities and experiences. The "Primitive" classes represent the most remote, undeveloped, and inaccessible opportunities, while the "Semi-Primitive (Motorized)" represents the most developed and accessible experience available in the Endicott River Wilderness. The area is defined by ROS mapping techniques as 97 percent or 95,400 acres Primitive I, less than 1 percent Primitive II and 3 percent or 2,400 acres Semi-Primitive Non-Motorized.

A Semi-Primitive Non-Motorized zone extends approximately three miles up from the river mouth, and runs north to an unnamed 4,055 foot peak and south to William Henry Peak. Recreation sensitivity level maps show an airplane route up the river to Adams Inlet and landing sites in the upper Endicott Basin have been mentioned. These landings are probably very rare (3-6 per year during moose season). Hiking up the river drainage is possible but rarely occurs (assuming little non-hunting use). For these reasons, the entire upper drainage is Primitive I (P-I). Reference Appendix I.

Access: The lower reaches of the Endicott River are used by airboats and jetboats, principally for hunting purposes.

Pre-ANILCA Helicopter Use: Scoping with Juneau-based helicopter companies indicated that one company TEMSCO, has operated in the wilderness prior to ANILCA. For a determination of prior use to be considered it must: occur prior to 1980, be on a "more or less regular basis," and not include administrative use (USFS, USGS, ADF&G, etc.). All use is in the process of being verified.

TEMSCO has reported moderate use (1-5 trips/year) in the upper Endicott River for recreation and as a staging area just outside of Glacier Bay National Park. Moderate use has been reported for the lower Endicott River for recreation and fishing.

Recreation Use: Endicott River has very low use. The Endicott River Wilderness is estimated to have between 450 and 550 RVD's per year for the period 1984-1988.

Visual Resources

This visual character type is coast range. In comparison to other character types in Southeast Alaska, scale of landforms are generally large, massive and give an impression of great bulk. Uplands are generally 5000 to 7000 feet in elevation dissected by deep steep-walled U-shaped valleys. Mountain ridges are generally rounded summits but are surmounted at times by aretes (sharp mountain ridges) and horns rising 8000 to 9000 feet. The large saltwater fiords protruding into this character type are sometimes extremely steep-sided, affording great visual relief because of the abrupt differences in elevation. This character type exhibits a great variety of geological features. Cliffs, rock escarpments, smooth glacially scoured faces and at higher elevations jagged

peaks, spires and cirques are evident. Shorelines vary from rocky bluffs to sand beaches.

Virtually the entire wilderness is in Existing Visual Condition 1 (the land appears to be untouched by human activity).

Cultural Resources

Based on a cultural resource overview compiled through a literature review, no prehistoric or historic cultural resources are known to exist within the boundaries of the Endicott River Wilderness area. No known archaeological investigations within the wilderness area boundaries.

Subsistence

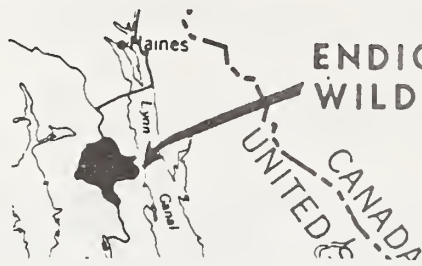
The Endicott River valley and a portion of Lynn Canal was utilized to gather a variety of foods.

The natives used the Endicott River area to hunt or trap mink, Lynx and other animals including goat, bear and gathered berries there. Others cultivated garden plots and gathered seaweed and mussels and hunted seal on the shore of Lynn Canal (Goldschmidt and Haas 1946:41, 53-54, 65).

Historic native use of the Endicott River Wilderness Area was probably limited to similar hunting and gathering activities. Recently, there is very little substantiated subsistence use in the Endicott River Wilderness and no subsistence permits have been issued.

Scientific Values

This is an excellent area to use as base line data to compare to areas near by that have been modified by a large timber sale. Also the area could be used as a seed source for planting stock.



ENDICOTT RIVER WILDERNESS



MAURELLE ISLANDS
WILDERNESS

ADMINISTRATIVE FACTORS

Location This Wilderness is an expansive cluster of islands just off the west coast of Prince-of-Wales Is. and about 20 miles by water northwest of Craig, Ak. This area is located on the Thorne Bay Ranger District. Legal descriptions are on file at the Thorne Bay Ranger District office in Thorne Bay.

This Wilderness includes one VCU- 566.

Administrative There are no administrative facilities in this Wilderness. This Wilderness is
Facilities administered from the Thorne Bay District Office in Thorne Bay, Alaska.

PHYSICAL ENVIRONMENT

Geography This Wilderness is made up of a variety of island clusters of different sizes. Anguilla, Esquibel and San Lorenzo are the major islands. Several smaller islands and associated islets and exposed rocks make up the rest of this area. All the islands have very low relief with elevations no higher than 400 feet.

Climate Maritime weather dominates this island Wilderness as it does most of Southeast Alaska. Normal temperatures range from the 40's to mid-60's F. in summer, and from the high teens to low 40's F. in winter.

Storms and moderate to heavy precipitation occur throughout the year, although storms are most frequent and precipitation is heaviest from September through November. In winter, because of the island's location on the outer coast, snowfall accumulations are usually not very heavy.

Surface winds are moderate to strong throughout Southeast Alaska. Prevailing winds generally blow from the south or southeast, except where local topography influences wind direction.

Air Air quality in this area is very good. There are no sources of pollution anywhere near this Wilderness.

Fire The incidence of forest fires in the Maurelle Islands Wilderness is extremely low. Summer rainfall and the relative infrequency of summer electrical storms are major factors in the low wildfire potential. Wildfires are generally man-caused and due to escaped campfires.

Minerals Due to the remoteness of the area and the rugged topography, little mineral exploration has occurred. There are no mining claims in this Wilderness.

Water Quality There are no major stream systems on the island and only a few short individual stream channels, all with small, steep watersheds. The water quality in these streams are expected to be good. No development activity has taken place in this area in the recent past that would affect water quality.

Soils (No report on specific soils of the Maurelle Islands is available.)

These islands are all National Forest System land.

Encumbrances and agreements are described as follows:

Public Service Sites. There are four public service sites on the San Lorenzo Islands. These were classified on August 28, 1941, as Native fishing camps. They are 1.06 acres, 2.32 acres, 0.78 acres, and 2/89 acres, respectively, for a total acreage of 7.05 acres. These were used by Tlingit and Haida Natives and by some Filipino fishermen as far back as 1929. Use was traditionally by fishermen who were trolling for king salmon. Use season was May 15 to July 7. Access was by boat. Approximately 30 to 40 Native families used the shores each year, with about 200 power trolling boats owned by both whites and Natives who used the channel as their headquarters and for an anchorage. Structures in place at that time included 35 cabins, 30 tent frames, 2 stores, 1 combination church and Salvation Army hall, and 1 fish buying plant. This information was obtained from a May 15, 1929, memo to the files from the Forest Supervisor.

An August 29, 1966, memo from the Forest Supervisor to the Craig District Ranger disclosed that structures had dwindled to a few cabins and a fish buying station by that date.

A June 20, 1983, inspection of the site revealed that remaining structures include two small shacks, seven tent platforms, five visqueen shelters, a dock, and two cabins. Most of these structures are badly deteriorated and unusable, but the dock and one of the two cabins were in use at the time and are being kept up through annual maintenance. Grounds were littered by deteriorating structures, visqueen, and debris.

Conversation with visitors on site disclosed that current use during trolling season consists of 20-50 boats with approximately 100 persons overnighiting at Hole-in-the-Wall. Most fishermen now stay on their boats with approximately 10 percent of them living on the beach in tents and visqueen covered shelter.

The use of these public service sites is still predominantly by commercial fishermen and their families, but some use occurs from deer hunters also.

The National Forest Management Act of 1976 has invalidated the status of this public service site designation. The Act requires that these types of activity come under regular special use permitting processes. No such permits have been granted for any of this land based activity. Future consideration must be given to whether these activities are to come under this process or are to be considered trespass activities.

Special Use Permits.

- a. Permit to Craig Fisheries, Inc., for a fish buying station at Hole-in-The-Wall. The permit authorizes a tailhold and expires on December 31, 1994, with the stipulation that a new permit may then be issued. Access is by boat.

In addition to authorized structures, it is likely that non-authorized structures exist in the wilderness. A cabin exists on the eastern San Lorenzo Island for which there is no known authorization. It is likely there are others.

No documented or known temporary camps for the taking of fish and wildlife existed before 1980.

Fisheries

Freshwater fisheries habitat on the Maurelle Islands is limited. No catalogued anadromous streams have been identified.

No threatened or endangered fish species have been found in the study area (USDA Forest Service, 1983).

Because of the limited amount of habitat available and the limited access, sport fishing within the Wilderness is minimal. There is no documented subsistence fishing use within the study area.

Abalone, clams, mussels, and other shellfish are found in the intertidal zones adjacent to the study area. Populations of these species have not been documented. There is probably some personal use of the intertidal shellfish, especially abalone, but this use appears to be minimal.

There are no existing or planned fish enhancement or aquaculture projects within the study area (Southern Southeast Regional Planning Team, 1982)

Wildlife

The islands within the study area support a wide variety of birds, land mammals, and sea mammals typical to Southeast Alaska.

Several areas, including Timbered Island, are important seabird nesting areas. At least twelve species of nesting seabirds have been documented as present or probable in these areas (Sowls, et al, 1982). The islands are also used by bald eagles.

Sea mammals present include harbor seals, sea lions, sea otters, and whales. Harbor seals are present throughout the study area, with heavy concentrations around the west side of the Maurelle Islands. Sea lions are also present throughout the islands. There are documented haul out sites on Timbered Island. (Klinkhart, 1978; LeResche and Hinman, 1973). Sea otters have been introduced in the Sitka and Craig areas and are now found throughout the area. The largest populations are found near Tonina and Twocrack Islands. Humpback whales and minke whales have also been documented adjacent to the study areas. Large populations of humpbacks use the northeast side of Sonora Passage and the east side of San Lorenzo and Esquibel Islands during the summer months.

Conspicuous land mammals include Sitka black-tailed deer, black bear, wolf, mink, marten, and land otter. Population levels for Sitka black-tailed deer, black bear, wolf, mink, marten and land otter have not been documented.

Sport hunting pressure on the Maurelle Islands is low due to lack of access. There is no documented subsistence hunting in these areas.

No known threatened or endangered wildlife species occur within the project area (Metzger, 1983).

Vegetation

The vegetation of the islands is typical of the outer coastal islands in the Alexander Archipelago: Sitka spruce, western hemlock, western redcedar and Alaska yellow-cedar with their associate understory species.

There are no known threatened or endangered vegetation species nor are any expected to be found (Helmuth and Fischer, 1983).

SOCIAL ENVIRONMENT

Wilderness

The Maurelle Islands have moderately high wilderness values based on the following four criteria.

- a. **Natural integrity** is moderately high due to the fact that these island stands by itself and is surrounded for the most part by large areas of saltwater.
- b. **Apparent naturalness** is high due to the fact that the landscape has remained unaltered by human activity.
- c. The **opportunity for solitude** is moderately high due to the remoteness of the island and the difficulty of access. However large fishing fleets frequent areas around many of the islands.
- d. The **opportunity of primitive recreation** is good due to the solitude one would experience and the scenic and recreation attractions of the area.

Recreation

Public Facilities

There are no existing developed recreation facilities in the area.

Trails

There are no developed trails in the area

Commercial

No outfitter/guides or other visitor services are known to have been operating in these wilderness prior to the implementation of ANILCA. Potential exists for future charter boat, kayak, or other marine oriented outfitter/guide activities.

There are no known commercial services being offered at this time to this area.

Dispersed Use

These small islands receive the most regular use of the three outer-island Wildernesses. Recreation use of the Maurelle islands is almost exclusively water oriented, since the islands are small. Hiking and hunting occasionally take place on land.

The Maurelle Islands offer the most opportunities to boaters, particularly for those with small boats. The islands offer many opportunities for wilderness recreation except at Hole-in-the-Wall, where commercial fishing use is concentrated.

Good anchorages are located at Hole-in-the-Wall, Nagasay Cove, and the northwest shore of Anguilla Island. Nagasay Cove is the best anchorage for recreational users due to fresh water supply, better anchoring qualities, and low use by commercial vessels.

There are many small beaches with day use potential. These include:

1. The east side of Sonora Island.
2. The north side of the San Lorenzo Islands.
3. The southeast side of Esquibel Island.

One other type of water feature which would be of interest to small boaters are the lagoons. There are two of these in this island group: one, in the center of Esquibel Island; and one on the tip of Anguilla Island.

Trail development within the Maurelle Islands is not necessary due to the small size of the islands, and their low, timbered topography. However, a water trail would offer unique wilderness compatible opportunities for exploring and testing wilderness skills. Developing a recreation opportunity guide for a water trail will identify the route, allowing it to be utilized in a manner in which would not detract from the wilderness values of the area.

Mooring buoy development may benefit boaters using the Anguilla Island anchorage, but Nagasay Cove has optimal anchoring conditions. The Maurelle Islands do not offer the outstanding opportunities for solitude of Coronation and Warren Islands because of the presence of numerous commercial fishermen in the San Lorenzo Islands. They do provide excellent opportunities for primitive recreation experiences, especially those which are marine oriented. (Hummel, 1983).

Recreation Opportunity Spectrum

Most of the Wilderness is inventoried as Primitive II. The area around Hole-in-the-Wall on San Lorenzo Island is inventoried as seme-primitive motorized due to the various structures in the area and the periodic concentrations of fishing boats in this area.

ROS CLASS	ACRES	PERCENT
PRIMITIVE I	100	1
PRIMITIVE II	4,000	92
SEMI-PRIMITIVE MOTORIZED	300	2

The GIS recreation data base displays a more detailed inventory and maps of the Recreation Opportunity Classes in the Wilderness as well as the key recreation areas and sites in the area.

Access

Access to this area is by airplane and boat. Most of the islands can be accessed by whalers and open skiffs from communities such and Craig and Klawock. There are no known pre-ANILCA helicopter landing sites.

Recreation Use

It is estimated that recreation use in the Maurelle Islands has averaged no more than 500 recreation visitor days over the last five years. All of this has been dispersed recreation use. Recreation use of this area can be expected to increase in the future due to the continued population growth within existing communities and in newly selected State lands.

Reported cultural sites in the Maurelle Islands area include the following: A village site north of Anguilla Island (Sealaska 1975); a smokehouse on Anguilla Island (1650 Historic Files); a burial site on Esquibel Island (*ibid.*); homes at Hole-in-the-Wall (1650 Historic Files); and two homesite applications at Hole-in-the-Wall, both of which were cancelled. One application was made in 1929; and the other in 1949. Moreover, an Indian Allotment Claim #AA-7957 by Fannie Brown at Hole-in-the-Wall had also been denied (5450 Files). Nagasay Cove on Anguilla Island was so named in 1924 by the U.S. Coast and Geodetic Survey because Nagasay is a Tlingit word meaning "blue fox", and there was a fox farm on the west shore of this cove (Orth 1967).

This information indicates that the outer island wilderness area was utilized traditionally on at least a seasonal basis. In addition to the activities mentioned above, the people could have fished for bottom fish and possibly for salmon (though the preferred method for catching the latter was to entrap them in weirs; and no major salmon streams or weirs are reported on any of these islands); hunted sea-otter and trapped fur bearers; hunted sea lions and seals; gathered seaweed (and one of the preferred kinds grows only where there is constant tidal surge); gathered abalone and gumboots; picked berries and gathered other edible flora; and built forts for defense against enemy groups. After contact with Europeans, people may well have developed garden spots near their traditional use areas.

A 1921 special use permit to the Anguilla Island Fur Company, which authorized them to commercially raise blue foxes on Anguilla, Sonora, and San Lorenzo Islands, resulted in heated controversy when Native families from Klawock and Craig and west coast salmon trollers protested. The latter group had serious apprehensions that the permitted commercial use would interfere with traditional seasonal use by Natives. This controversy led to cancellation of the permit and Forest Service designation of the public service sites at Hole-in-the-Wall. The conflict between fur farmers and the Natives was apparently resolved when the market for furs declined drastically, later in the 1920's. In recognition of the historic and continuous land use at Hole-in-the-Wall, the State of Alaska granted the site an Alaska Heritage Resource Survey designation, CRG-109.

In regard to archeological surveys, two have been conducted in the area. The first occurred in 1974, the objective being to identify on-the-ground those sites reported to be of significance to the Native people (Sealaska 1975). Ultimately, although several hundred sites were identified in the Ketchikan Area alone, only a fraction were deemed important enough for selection as Historic and Cemetery Sites under Section 14(h)(1) of the Alaska Native Claims Settlement Act. None of the selected sites are situated in the Maurelle Islands Wilderness.

The second archeological survey was conducted from June 20-21, 1983, by the Forest Service and was a low level reconnaissance, the sole purpose of which was to identify the presence of obvious sites. Only one subsurface site was found, this being on the west shore of Nagasay Cove which indents Esquibel Island. Here, a shell midden exposure was encountered and three to four house berms were identified on an upper terrace. Historic remains, including chicken wire fences associated with the fox farm, and a collapsed building of milled lumber were located in the beach fringe; and on shore were pilings and a boat ways. The boat ways has been re-paired through time, and appears to still be usable. South of the boat ways was a 1.3 meter-wide canoe landing. This site shall hereafter be referred to as CRG-168.

At Hole-in-the-Wall, subsurface probes were excavated on terraces located inland and above the historic remains, but with negative results. Although the level of survey was insufficient for the purpose of determining the total presence or absence of sites, indications point toward the possibility that Hole-in-the-Wall had not been heavily utilized on a seasonal basis prior to the late nineteenth century or early twentieth century.

The State of Alaska (1984) has identified three heritage sites in the Maurelle Islands, in its Draft Southeastern Tidelands Area Plan for State lands in the Southwestern Prince of Wales Island Area. These three sites are Sonora Passage Village (AHRS-C-137), Hole-in-the-Wall Village (AHRS-C-109), and San Lorenzo Village (AHRS-C-134).

Visual Resource

No formal visual resource inventory has been completed for this area though extensive informal surveys and field observations have taken place in the past.

This area is part of the Kupreanof Lowlands character type which is characterized by generally low rolling terrain, elevations seldom greater than 1500 feet, numerous island groups, and intricate waterways. The Maurelle Islands are very characteristic of this character type, possessing many groups of small islands separated by a variety of saltwater channels. All the islands have very low relief. There is no outstanding scenic diversity in this area, hence all of the area would probably be inventoried as a Variety Class B (possessing landscape features and diversity that is common for the character type.) However there are several notably attractive areas within these island groups, particularly the intricate coves and channels around Anguilla Bay and Esquibel Island.

Because this is a classified Wilderness, the inventoried visual quality objective for the entire area is Preservation which generally permits only small scale, low visual impact recreation facilities.

Subsistence

There is no documented subsistence use of fisheries and wildlife resources within this Wilderness.

Scientific Values

Research into the coastal geomorphology of this area, and into how past glaciations influenced the landscape of this Wilderness may be of scientific value.

MISTY FIORDS
NATIONAL MONUMENT
WILDERNESS

ADMINISTRATIVE FACTORS

Location

Misty Fiords National Monument Wilderness is located in southernmost Southeast Alaska adjacent to the Canadian border . It extends north from Dixon Entrance approximately 110 miles to beyond the Unuk River. The western boundary lies just 22 miles east of Ketchikan and the eastern boundary extends another 45 miles to the Portland Canal and the Canadian border. A complete legal description of the boundaries of the Monument Wilderness is on file at the Ketchikan Area Supervisor's Office, and at the Misty Fiords National Monument Office in Ketchikan, Alaska.

This wilderness includes the following VCU's: 730,754,755, 769-803,808-814,816,817,819-822,824, 825, 827-840, 843-863, and 867.

Administrative
Facilities

Misty Fiords National Monument Wilderness is currently administered from a Ketchikan administrative site. No permanent maintenance, storage, or administrative structures are located within the Monument. Temporary maintenance camps and floating facilities are used to manage projects.

PHYSICAL ENVIRONMENT

Geography

Most of Misty Fiords is part of the coastal range of mountains that stretch along the western edge of most of North America. This area is characterized primarily by a variety of deep, narrow and steep-walled fiords that cut into these massive landforms. Prominent on the the steep slopes rising from these waterways are sheer rock cliffs that take many different forms.

Also prominent in Misty Fiords are three major rivers, the Unuk, the Chickamin, and the Leduc, that drain out of large icefields and glaciers in the northwest corner of this Wilderness. These rivers cut through wide U-shaped valleys that are also often bounded by massive rock cliffs.

The southern end of this area is characterized by more gentle, rolling terrain and a flat but irregular coastline with many sandy beaches facing the Pacific Ocean.

Climate

Misty Fiords National Monument Wilderness may be divided into two climatic zones: the maritime zone and the continental transition zone. The maritime zone is typical of islands within Southeast Alaska and is characterized by moderate temperatures and abundant precipitation. Dominant climatic factors are topography, which influences local wind patterns, and the Pacific Ocean, which moderates temperatures and keeps moisture levels high. Summer temperatures usually range from 46 to 70 degrees (F), while temperatures in winter average between 32 and 42 degrees (F). Average annual precipitation is approximately 120 inches, with June and July being the driest months.

Further inland, the influence of the Pacific Ocean diminishes. This area is the continental transition zone. Temperature variations become more pronounced, and

there is less cloudiness and precipitation than in the maritime zone. While no climatic stations exist in the eastern portions of the Wilderness, streamflow records indicate precipitation to be about 80 to 100 inches/year in the maritime zone. Total annual snowfall is estimated to range from 400 to 800 inches.

Air Air quality in Southeast Alaska is generally very good. There are relatively few major emissions sources in the region, and pollutants are rapidly dispersed by winds and removed by precipitation. Air quality in the state is regulated by the Alaska Department of Environmental Conservation.

Fire The incidence of forest fires in the Misty Fiords Wilderness is extremely low. Summer rainfall and the relative infrequency of summer electrical storms are major factors in the low wildfire potential. Wildfires are generally man-caused and due to escaped campfires.

Minerals One of the reasons Misty Fiords National Monument Wilderness was established is to protect objects of geological interest [ANILCA 101 (a, b)]. No detailed inventory has yet been conducted to identify and locate these objects. Much of the existing information comes from Mineral Resources of the Granite Fiords Wilderness Study Area, by Henry C. Berg, et al., 1977 (USGS Bulletin 1403).

Misty Fiords lies within the Coastal Foothills and the Boundary Ranges Physiographic provinces. The Coastal Foothills consist of groups of mountains 3-30 miles wide separated by flat-floored valleys and straits 1/2-10 miles wide. Mountains less than 3,500 feet high have been over-ridden by glaciers and are rounded and smoothed. Most streams are less than 10 miles long. The lower parts of their valleys are "drowned", forming inlets and harbors. Bedrock consists of northwest trending belts of metamorphic rocks cut by numerous faults parallel to the northwesterly trend of the rocks. Small intrusive bodies of igneous rock have cut the metamorphic rocks.

The Boundary Ranges are a partially glacier-covered upland, 5,000 to 7,000 feet in altitude, dissected by a dendritic pattern of deep, steep-walled, U-shaped valleys. Many of the valleys are drowned and form fiords. The mountains give an impression of great bulk and are bordered largely by cliffs that plunge several thousand feet to tidewater. Most of the range is drained by glacial streams less than twenty miles long. Large braided rivers flow southwestward across the range at intervals of 30 to 120 miles. The Boundary Ranges are underlain mostly by the massive granite rock of the Coast Range batholith.

Several unique geologic features have been identified and mapped (refer to planning records at the District Office). Textbook examples of glacial landforms from outwash moraines to cirque basins and horns are present. Volcanic cinder cones, lava flows as recent as 1900, and hot springs can also be found within the Wilderness.

The existence of mineral deposits and mining claims presents special concern for Monument Wilderness management. Early mineral activity in Misty Fiords was limited to small gold mining operations near Hyder. In 1974, US Borax and Chemical Corporation discovered a molybdenum deposit at Quartz Hill near Wilson Arm and Boca De Quadra. The deposit has an estimated ore reserve of 1.5 billion tons. US Borax anticipates having a mine in operation by the mid-1990's. Details of the proposed mine operation are contained in the Final EIS for the mine development.

Hydrology

Two distinctly different hydrologic units or types are found within Misty Fiords, both closely associated with existing climatic zones. The hydrologic unit most greatly influenced by maritime climates includes Revillagigedo Island and the coastline of the mainland up to about 10 to 15 miles inland. This area is characterized by two low-flow and two high-flow periods. The lowest annual flow occurs between January and March when both maximum and minimum daily air temperatures drop to freezing and potential runoff becomes stored as snow and ice. The second low runoff period occurs during July and August, paralleling the normal decrease in rainfall. High flows occur in May and June from snowmelt and rain, and again during the fall, due to heavy precipitation. Runoff peaks are of short duration and may occur at any time during the year, often resulting from intense rainstorms.

Overall water quality is expected to be high in all streams except those sediment laden glacial streams and rivers which have a milky appearance, particularly during the high run-off periods in May and June.

Soils

Varying soil types or series are present within Misty Fiords. Both mineral and organic soils are present, generally overlaying compact till or bedrock. Bedrock consists of intrusive granodiorite, metasedimentary, metamorphic, or volcanic rock.

The mineral soils range in depth from less than 10 inches to 4 feet in places where parent material is residual, having accumulated by the disintegration of consolidated rock in place. Soils developing in parent material derived from colluvium, alluvium, or glacial till deposits range from 5 to 40 feet in depth. The deeper soils are associated with valley bottoms and slopes with moderate gradients, while the shallower residual soils are associated with steeper slope gradients. Many of these soils contain large amounts of gravel and stones, and all are covered with a 6-16 inch layer of organic duff.

Soil drainage ranges from well-drained to poorly-drained, depending on soil type or series. Well-drained to somewhat poorly-drained soils support coniferous forest communities. Those soils with poor to very poor drainage generally support what is typically referred to as muskeg terrain.

Organic soils range in depth from less than 6 inches to more than 15 feet. These soils are poorly to very poorly drained, with the water table at the surface or within 6 inches of the surface. Scrub conifer or low shrub and herbaceous plant communities (referred to as muskeg, peat, or bog areas) are supported by organic soils.

Land Status

The Monument Wilderness contains approximately 2,142,243 acres, of which 572 are in private ownership. Major holdings consist of 414 acres at the mouth of the Unuk river, 85 acres at the mouth of the chickamin river, 35 acres at Mink Bay, 10 acres at Hidden Inlet, 14 acres near Badger Bay, 5 acres in Portland Canal, 5 acres on Tongass Island, and a patented mining claim at Gokachin Creek. A detailed description of these tracts may be found in the "Land Status Atlas," located at the Forest Supervisor's Office, Ketchikan Area, Tongass National Forest.

Additionally, there are four areas which have been identified under Section 14(h)(1) of the Alaska Native Claims Settlement Act of 1971. The four areas are: Fort Tongass (11.4 acres), Tongass Island Village (19.2 acres), Cape Fox

Village (12.75 acres), and Kah Shakes Cove Village (4.65 acres). Native allotments could be applied for under the 1906 Alaska Native Allotment Act. There are four applications pending within Misty Fiords National Monument. They are located in Burroughs Bay, Wilson Arm, Halibut Bay, and Narrows Pass.

Wilderness sites with authorized special uses or other encumbrances include:

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EXISTING SPECIAL USE PERMITS

Area	Special Use	Holder
Monument-Wide	Outfitter/Guide Permits (12)	
Monument-Wide	Outfitter/Guide Waivers (2)	
Cripple Creek	Camp	ADF&G
Bakewell Creek	Dam and Weir	ADF&G
Foggy Bay	Cabin	Dept. of Public Safety
Hugh Smith Lake	Camp	ADF&G
Keta River	Exper. Demonstration	ADF&G
Unuk & Chickamin R.	Camp	ADF&G
Foggy Bay	Shoreties & Waterline	ADF&G
High Mtn.	Electronic Site	Alascom
Mirror Lake	Fishing Club	Chandler & Bass
Walker Lake	Camp	Sports and Wildlife Club
Monument Wide	Movie (Video)	Frederick
Claude Point	Residence	Jensen
Quartz Hill	Electronic Site	Pacific Coast Molybdenum
Quartz Hill	Storage Site	Pacific Coast Molybdenum
Quartz Hill	Stream Guage	Pacific Coast Molybdenum
Foggy Bay	Waterline	Petersburg Fisheries
Nakat Bay	Camp, Dam, Weir	SSRAA
Humpback Lake	Resort	Sportsman Paradise Tours
Quartz Hill	Access Road	U.S. Borax

In addition there are 8 lighthouse reserves held by the U.S. Coast Guard in various locations in the Wilderness.

Both the Claude Point cabin - a private residence cabin, and the Mirror Lake cabin - a private fishing club are covered under provisions of ANILCA Section 1303. These permits were originally issued in 1955 and 1956 respectively.

There were no documented or known temporary camps for the taking of fish or wildlife existing before the implementation of ANILCA in 1980.

Hydropower withdrawals are located on the following thirteen lakes: Lake Grace, Manzanita Lake, Hidden Inlet Lake, Humpback Lake, Big Lake, Third Lake, Mirror Lake, Ella Lake, Lower Ella Lake, Punchbowl Lake, January Lake, Granite Lake, and Claude Lake. Of these, Lake Grace is consider to have the greatest potential for future development. No formal action has been taken, however. Lake Grace is the only site that has been analyzed as a potential project. Any hydropower development in Misty Fiords would require Presidential approval. A related potential use results from a proposal for a power grid to serve Southeast Alaska, including the proposed US Borax molybdenum mine in the central portion of the Monument. Both land grid and marine cable distribution networks are under consideration.

One final area of special management consideration is the delineation of a 151,832 acre "nonwilderness area" including and surrounding the proposed Borax mine site. Although this is not "Wilderness", it is "National Monument" and must be managed in as compatible a fashion as possible.

BIOLOGICAL FACTORS

Fisheries

The anadromous fishery resources of Misty Fiords National Monument Wilderness are abundant and highly productive. Five species of Pacific salmon occur within the area including pink, chum, sockeye, coho, and chinook. Other anadromous fish species present include steelhead and cutthroat trout, Dolly Varden char, and eulachon.

There are 147 catalogued anadromous fish streams tributary to the waters of Behm Canal, Revillagigedo Channel, Dixon Entrance, and Pearse and Portland Canals. These streams range in size from large, glacial mainland river systems to small, high gradient clearwater streams directly entering salt water. Numerous large and small lakes are accessible to anadromous fish.

Anadromous fish streams within Misty Fiords correspond to commercial fisheries District 101 as defined by the Alaska Department of Fish and Game. Within this District, commercial fisheries management emphasis is given to the natural production of pink salmon. Additional management emphasis is given to the Tree Point gill net fishery for sockeye salmon, and to appropriate fishing restrictions for the protection of chinook salmon returning to the streams in the Wilderness.

Sport fisheries resources consist of both anadromous and resident fish. Sport fishing for anadromous fish occurs in the rivers and streams and adjacent marine waters. The principal anadromous sport fish species are chinook, coho, and pink salmon, steelhead, cutthroat trout, and Dolly Varden char.

Sport fishing for salmon in marine waters adjacent to the Wilderness is regulated by the State of Alaska. Sport fishing in rivers and streams is allowed within the standard limits established by the State. Sport fishing for chinook salmon in fresh water is prohibited.

Numerous lakes in Misty Fiords provide high quality sport fishing opportunities for both native and introduced fish species. The principal lake sport fish species are cutthroat and rainbow trout, Dolly Varden char, arctic grayling, and kokanee. Available records indicate that in many lakes, trophy-sized fish are quite common. Cutthroat trout, Dolly Varden char, and kokanee are commonly considered to be native to the Monument's lakes. Grayling and rainbow trout have been introduced to many lakes with varying degrees of success.

Extensive limnological investigations have been conducted on many lakes throughout Alaska in support of on-going salmon enhancement programs, including the lake fertilization and barrier lake stocking programs. These studies have revealed that lakes in Southeast Alaska are characterized by soft, nutrient poor (oligotrophic) water and subject to high rates of flushing. These and other habitat characteristics indicate Southeast Alaska lakes are relatively low in productivity. Recent studies on cutthroat trout in Wilson Lakes and several other lakes in the area have indicated that most resident cutthroat trout systems

in Southeast Alaska are populated by slow growing, old fish. On the average, 5-6 years are required to produce a mature cutthroat trout over 12 inches in length.

Existing fish habitat enhancement activities in the Wilderness consist of the Bakewell fishway (the fishway itself is in nonwilderness), and the Badger Lake and Hugh Smith Lake fertilization projects. There are several other enhancement opportunities in this Wilderness. These opportunities primarily address providing access to habitat above barrier falls for anadromous fish.

Outfitter/guide services operate within Misty Fiords, primarily for big game hunting and recreational fishing. Current outfitter/guide activities are being placed under permit. As a result, little information is available on specific areas and the fish and wildlife resource being affected at present.

No threatened or endangered fish species are known to exist in the Wilderness.

Wildlife

Fifty-three species of mammals, 269 bird species, and seven reptile and amphibian species potentially occur in Misty Fiords. The status of most of these species is unclear due to a lack of wildlife inventory information. Major game and furbearing mammals include brown and black bear, mountain goat, Sitka black-tailed deer, moose, wolf, wolverine, marten, river otter, mink, and beaver. Bird species include bald eagles, Vancouver Canada geese, blue grouse, and three species of ptarmigan. Marine mammals, such as Steller's sea lion, harbor seal, harbor and Dall porpoise, and killer whale, are present in the adjacent waters.

Misty Fiords contains a diverse mixture of wildlife habitats. Old-growth forests are important to a number of wildlife species including Sitka black-tailed deer, mountain goats, marten, and bald eagles. At higher elevations, the alpine zone is important summer habitat for Sitka black-tailed deer and mountain goats, which utilize the abundant, high-quality forage found there.

Salmon runs provide an abundant and critical food source for black and brown bear, bald eagles, furbearers, wolves, and others during the late summer and fall. The Unuk and Chickamin Rivers are also important as biogeographical links with interior Canada, and provide habitat for moose and typically Canadian bird species.

Estuaries at the mouths of streams and rivers serve as wintering habitat for Vancouver Canada geese and other waterfowl, as well as spring foraging sites for brown and black bear. Special habitats include freshwater marshes (especially along the Chickamin River), cliffs, glaciers and snowfields, caves and small islands. These assume varying degrees of importance for wildlife. Cliffs, for example, have been shown to be an important habitat component for wintering mountain goats.

No terrestrial threatened or endangered wildlife species are known to occur in Misty Fiords. Humpback whales exist in the waters around the Wilderness, and it is possible that an endangered subspecies of peregrine falcon (American or Arctic) may migrate through the area.

Five wildlife species have been judged to be of special concern due to their sensitivity to disturbance or over-harvest. With the exception of the bald eagle, all are valuable for both consumptive and nonconsumptive uses. Species of special concern are:

Mountain Goat - Goats occur throughout the mainland, and were recently transplanted to Revilla Island. Current goat populations are considered excellent, due to a recent series of mild winters. The current bag limit is two goats, taken by a registration permit system. The harvest is fairly well distributed throughout the Wilderness, with air transportation utilized by 80 percent of the hunters pursuing goats. Most of the hunting takes place within 2 or 3 miles of lakes accessible to floatplanes (Wood, pers. comm.). Mountain goats may also be considered to be a subsistence resource for some local residents.

The Alaska Department of Fish and Game conducts annual goat surveys in the area; hence, better population trends and composition data exist for this species than any other.

Brown Bear and Black Bear - Black bears are numerous in the Wilderness and hunting pressure is generally light. Twenty two black bears were harvested in 1982, and 17 harvested in 1988. Harvest for intervening years were not available at this time. The nonresident proportion of the harvest is usually about 25 percent. Hunting pressure has remained relatively constant for several years. Brown bears occur only on the mainland and may be relatively common locally. A record number of seven brown bears were taken in 1979. Five were harvested in 1983, three in 1984, one in 1985, two in 1986, three in 1987, one in 1988.

Bears are difficult to census, and little is known about current population levels of the two bear species. Although current hunting pressure is light, bears are vulnerable to localized overharvest due to their predictable seasonal use of specific habitats, i.e., estuarine grassflats in the spring and fish streams in the late summer and fall.

Moose - Moose in Misty Fjords are restricted to the Unuk and Chickamin River drainages. Although no census information is available, the Chickamin River moose population is very small with a transplant of 14 moose to the Chickamin in 1963-1964, considered unsuccessful. The Unuk River moose population is also small. Hunting pressure currently is moderate, with 3 bulls harvested on the Unuk in 1981 and 0 in 1982. Three were harvested in 1983, seven in 1984, none in 1985 and 1986, two in 1987, and eight in 1988. Currently, the small Unuk River population, combined with difficult access and a one bull limit have combined to minimize hunting pressure. It is felt that this population could not sustain more than a token hunting effort.

Bald Eagle - Bald eagles are common in Misty Fjords and are an important aesthetic resource. Eagles nest almost exclusively in large, old-growth trees within 200 yards of the beach. Southeast Alaska has the densest breeding population of bald eagles in North America, and the Forest Service is committed to maintaining current populations. Overall eagle populations in Misty Fjords seem to be lower than average compared to other areas in Southeast Alaska, although available nesting habitat does not seem to be a limiting factor. The Unuk and Chickamin Rivers support large numbers of bald eagles during salmon runs.

Vegetation

The major plant associations found in Misty Fjords are true forest, grass-sedge meadows, muskeg, and alpine tundra.

A cool, very moist rain forest extends from sea level to about 3,000 feet. Major tree species include western hemlock, Sitka spruce, western red cedar, and Alaska cedar. Other species found are red alder, subalpine fir, and Pacific silver fir. Due to high humidity, mosses grow in great abundance.

Shrub species include blueberry, huckleberry, copper brush, devil's club, and salal. Muskegs are dominated by sphagnum mosses and sedges with overstories of scattered lodgepole pine and western red cedar. Alpine tundra exists above 2,500-3,000 feet, with heath, grasses, and other low plants being predominant.

Logging has occurred in various forms since man first arrived in the area. Evidence of hand logging is visible near beaches. In the 1950's, there were two clearcuts made on Revillagigedo Island near Ella Point and Wasp Cove. The total 150 acres is revegetated, but, due to differing vegetation types, the sites are visible from passing boats and aircraft. Beached log salvage is currently authorized on most beaches by joint State and Federal permits. The salvaged logs commonly originate from broken log rafts or from natural blowdown that has washed down rivers.

SOCIAL FACTORS

Social factors represent man's relationship with the wilderness. This relationship may be a perception from afar, directly related to use of the wilderness, or the effect of the wilderness designation upon man.

Wilderness

The attributes which comprise the wilderness character of Misty Fiords are derived from the various physical, biological, and aesthetic resources which are present. These are described elsewhere in this chapter. It is important to recognize that wilderness is itself a resource.

While it may have ecological, geological, scenic, or historical values that are exceptional or unique, those values alone do not refine wilderness--they merely describe it. As stated in Section 2(c) of the Wilderness Act, it is further described as:

- * "Where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain."
- * "Land retaining its primeval character and influence, without permanent improvements or human habitation."
- * "Generally appears to have been affected primarily by the forces of nature with the imprint of man's work substantially unnoticeable."
- * "Outstanding opportunities for solitude or a primitive and unconfined type of recreation."

Four basic attributes were used in the second Roadless Area Review and Evaluation (RARE II) process as a basis for rating the wilderness potential of different roadless areas. They include: a. Natural Integrity; b. Apparent Naturalness; c. Opportunity for Solitude; and d. Opportunity for Primitive Recreation.

Natural Integrity. The natural integrity of Misty Fiords National Monument Wilderness is generally strong and well-established. Boundaries follow topographic features (ridge-lines), and major water bodies. The area is almost totally in National Forest ownership, with less than 0.1 percent in private

holdings. The 152,610 acre nonwilderness portion of the Monument which surrounds the Borax mine site, and other potential off-site impacts (e.g., timber harvest on Revilla Island) were recognized and used in establishing the boundaries to minimize conflict with wilderness values.

Apparent Naturalness. Misty Fiords appears to be essentially unaltered by human influence. The relatively few, and widely dispersed, alterations are generally insignificant. In most cases, they are not readily apparent to the casual observer. These include approximately 150 acres of 20-30 year-old clearcuts which are quickly returning to their natural state, scattered cabins used by trappers and prospectors, and recreation cabins and trails.

While natural integrity is apparently strong now, the potential development of State and private lands within the Monument has the potential to significantly change the character of the Wilderness in some locations. There are eight parcels of existing private land and twelve parcels of pending State and Native selections widely scattered in key bays and anchorages throughout the Wilderness.

Opportunity for Solitude. Misty Fiords provides opportunities for solitude that can be matched in very few parts of the United States. Its large size (approximately 45 miles wide and 110 miles long), over four hundred miles of coastline, and scores of mountain lakes provide the Wilderness visitor with the opportunity to spend days, or even weeks, in "self-imposed isolation". In areas adjacent to major saltwater travelways, near recreation cabins and trails, or flightseeing routes, the opportunity for solitude is reduced, but only in comparison to the rest of the Wilderness.

Opportunity for Primitive Recreation. In terms of diversity and challenge, Misty Fiords is again rarely equalled in opportunity. Mountain climbing, kayaking, fishing for anadromous and resident sport fish, hunting for deer, brown bear, moose, and mountain goat, dispersed camping and hiking, and photography are only some of the diverse forms of recreation available. Challenge is not used in the "sporting" sense alone. In many cases, a safe return depends on being prepared to meet nature's challenges, and having the ability to survive difficult terrain, severe weather conditions, and encounters with potentially dangerous wildlife.

Recreation

Natural Setting. The rugged environment of Misty Fiords has a profound influence upon the types of recreation which occur. The dense forest understory and sheer mountain slopes encourage the use of boats, aircraft, and developed trails. Cross-country travel is arduous.

Severe weather conditions, mostly heavy rain and wind, also influence the type of use and travel. Even when it is not actually raining, heavy cloud cover and dense fog can restrict air travel. Strong northerly or southerly winds can limit boat travel, especially in East Behm Canal.

The same environmental factors (abundant precipitation) which challenge or limit the recreationist also contribute to healthy fish and wildlife populations. The quantity and quality of both hunting and fishing experiences in the Wilderness make them among the most popular recreational activities.

Public Facilities and Programs. The Forest Service currently maintains 14 rental cabins and three "Adirondack" (three-sided) shelters or lean-to's for public use in Misty Fiords. They are located in a variety of settings, ranging from salt water to inland freshwater lakes, and on up to alpine areas. Two older

recreation cabins are no longer being rented to the public, since they do not meet minimum standards for health and safety.

RECREATION FACILITIES- MISTY FIORDS WILDERNESS

<u>SITE NAME</u>	<u>TYPE FACILITY</u>	<u>PAOT</u>	<u>LOCATION</u>
Alava Bay	Rec. Cabin & buoy	6	Alava Bay
Bakewell	Rec. Cabin	6	Bakewell Lake
Beaver	Rec. Cabin	6	Manzanita Lake
Big Goat	Rec. Cabin	6	Big Goat Lake
Checats	Rec. Cabin	6	Checats Lake
Ella Narrows	Rec. Cabin	6	Ella Lake
Hugh Smith	Rec. Cabin	6	Hugh Smith Lake
Humpback	Rec. Cabin	6	Humpback Lake
Manzanita	Rec. Cabin	6	Manzanita Lake
Red Alders	Rec. Cabin	6	Ella Lake
Wilson Narrows	Rec. Cabin	6	Wilson Lake
Wilson View	Rec. Cabin	6	Wilson Lake
Winstanley Island	Rec. Cabin & buoy	6	Winstanley Island
Winstanley Lake	Rec. Cabin	6	Winstanley Lake
Manzanita Bay	Rec. Shelter & buoy	4	Manzanita Bay
Nooya Lake	Rec. Shelter	6	Nooya Lake
Winstanley Lake	Rec. Shelter	4	Winstanley Lake
Gokachin Creek	Buoy		Gokachin Creek (mouth)
Klahini River	Buoy		Klahini River (mouth)
Mink Bay	Buoy		Mink Bay
Princess Bay	Buoy		Princess Bay
Punchbowl Cove	Buoy		Punchbowl Cove
Walker Cove	Buoy		Walker Cove

The cabins are available by reservation on a first-come, first-served basis for a fee of \$15 per night. They are constructed of pre-cut cedar logs, measure approximately 12' x 14', include a wood stove, and have sleeping space for six people. Refer to Recreational Facilities: Tongass National Forest, Ketchikan Area (pamphlet No. 65) for detailed descriptions of the cabins, their locations, and the reservation process.

The Adirondack shelters were constructed by the Civilian Conservation Corps (CCC) in the 1930's and stand as beautiful examples of rustic craftsmanship. They are constructed of native cedar logs and shakes, and are currently free use with no reservation required..

Two of the cabins (Alava Bay and Winstanley Island) and one shelter (Manzanita Bay) are located adjacent to salt water. These shelters and cabins compliment other such facilities in nonwilderness to provide a system of marine related recreation sites. They are especially popular among local and nonlocal visitors who use them as stopover points while on boat trips around "Revilla" Island. These facilities also act as emergency shelters for small craft in distress or while waiting out stormy weather.

The majority of the facilities are located on inland freshwater lakes (12 cabins and two shelters). Their primary attractions include good to excellent freshwater fishing opportunities, hunting and hiking opportunities, and spectacular scenery. The cabin at Big Goat Lake also provides direct access to alpine areas. An aluminum skiff is available at each cabin, and many users bring along a small outboard motor to use.

Based on cabin use reports on file at the Misty Fiords National Monument Office, the majority of user trips (70 percent) are from local Ketchikan area users. While several cabins can be reached by trail from salt water, most lake cabins are accessed by floatplanes from Ketchikan. The average cost of air transportation is about \$400 - \$600 for a party of four people. Rates have increased substantially in recent years.

Seven mooring buoys are presently maintained by the Forest Service in Misty Fiords. They compliment other buoys located in nonwilderness to provide safe anchorage. These anchorages often serve existing marine site facilities such as cabins, shelter, and trailheads.

Trails

The current trail system in Misty Fiords is also a product of the CCC era. At one time, the 10 trails provided good access to a variety of recreational opportunities. Since that time, many of the trails have suffered due to a lack of adequate maintenance. Nine trails currently meet minimum standards for safe use. The remaining trail is impassable over some segments.

All existing trails are relatively short (one to three miles in length), and lead from salt water to the outlet of a freshwater lake. The trail system, as it exists, does not adequately facilitate wilderness types of travel.

TRAILS IN MISTY FIORDS WILDERNESS

NAME OF TRAIL	TRAIL NO.	LENGTH (MILES)
Bakewell Arm-Bakewell Lake	957020	1.0
Checats Cove-Lower Checats Lake	957040	1.1
Ella Lake	957070	2.5
Hugh Smith Lake	957080	0.2
Gokachin Lakes	927110	1.0
Humpback Creek	957150	3.0
Manzanita Lake	957210	3.0
Nooya Lake	957240	1.1
Punchbowl Lake	957290	0.7
Winstanley Lake	957430	2.3

Commercial

The use of commercial visitor services for access to use and/or view the Wilderness has increased dramatically since the original 1978 designation of the Misty Fiords National Monument. Most dramatic has been the development of flightseeing to a level of approximately 10,000 clients per year, predominately off the cruise ships. An extensive effort is underway to bring all commercial

visitor services under Outfitter Guide permits. These permits will provide the basis for monitoring the amount of use and serve as the tool to work with operators to provide the best impact on wilderness values. Ongoing monitoring of these activities, along with inventories and establishment of carrying capacities, will eventually describe at what point limitations on specific uses are needed.

The role of outfitter guiding in Misty Fiords is unique, due to the remoteness of the unit and the logistics involved in even reaching entry points. Many of the commercial services, boat and air charter particularly, are necessary to provide access to the majority of the public. This access is limited to interior lakes, rivers, and the coastline.

Other commercial visitor services offer the means to enter and enjoy the Wilderness. The level of this use is limited at this time, and occurs primarily along the coastlines. As the coastlines provide the easiest access, particularly along East Behm Canal, there is opportunity for competition for space between outfitter guides and self-sufficient recreationists. This is not occurring at this time and has not been a limitation to issuance of Outfitter Guide permits.

- 1) Charter Aircraft. Charter aircraft provide the quickest, easiest, and most often-used mode of transportation to Misty Fiords. They also provide the best overall perspective of the two and one-quarter million acre Wilderness for the first-time visitor. Two main uses are made of aircraft: a) "flightseeing" tours, and b) drop-off/pick-up flights to specific destinations.
- 2) Tour Boats and Cruiseships. These range in size from a Ketchikan-based tour boat which carries six to thirty-two passengers per trip, to the Stardancer ship which carries over 1100 passengers and crew.
- 3) Charter Boats. There are several small to intermediate charter boats that provide fishing and tour trips through Misty Fiords. The predominant use is limited to salt water, with occasional shore stops for lunches, beachcombing, and short treks.
- 4) Other Visitor Services (e.g., backpacking, hiking, and kayaking) has increased along with that of hunting and fishing. There are a variety of services that range from transportation to complete outfitting and guiding.

Pre-Anilca Visitor Services (Other than for fish & wildlife)

The only documented visitor services provided before 1980 other than the general boat and aircraft charter services and flightseeing trips described above are services offered by the Humpback Lake Resort and the Mirror Lake Fishing Club described in the land status section above.

Dispersed Recreation Use.

Recreation use is dispersed over much of the Wilderness. However, certain uses tend to be highly concentrated in limited geographic areas, such as fresh-water lakes which are accessible by floatplane, and on primary saltwater boat travel

routes. The central portion of the Wilderness, bounded by Walker cove, Smeaton Bay, and Ella Lake, receives over 70 percent of all use.

While it is generally true that use is increasing, obtaining accurate statistical information is difficult due to the remote nature of the Wilderness. Cabin use data, direct observation by Forest Service employees and volunteers during the past two years, and information obtained from Alaska Department of Fish and Game and local tour organizations do indicate certain trends or patterns. This information served as input into the development of the Recreation Opportunity Spectrum (ROS) inventory for Misty Fiords. For example the areas inventoried as Semi-Primitive Motorized tended to be where use is concentrated.

Dispersed use activities in Misty Fiords include hunting, hiking and camping on the trails in the area, and kayaking and camping along the many saltwater channels and fiords.

Recreation Opportunity Spectrum

The existing Recreation Opportunity Spectrum (ROS) class situation is displayed in the table below.

ROS CLASS	ACRES	PERCENT
Primitive I	1,561,100	73
Primitive II	523,400	25
Semi-Primitive Non-motorized	6,700	>1
Semi-Primitive Motorized	40,200	2
Roaded Modified	200	>1

The Primitive II areas are generally along the major saltwater channels and fiords that penetrate the Wilderness where someone on the land would tend to occasionally encounter boat or airplane traffic. Other areas inventoried as Primitive II are the upland lakes that receive regular visits from airplanes flying to specific recreation cabins or other facilities. Most of the the rest of the interior of this Wilderness is inventoried as Primitive I. These areas are seldom visited, and hence a person in these areas would not likely encounter any other humans. The Semi-Primitive Motorized areas are the more popular scenic areas that during the tourist season receive frequent visits almost everyday by flightseeing trips, cruiseships, small tour boats, private boats or kayaks.

The Tongass National Forest Plan Revision GIS data base provides a more detailed inventory and maps of the Recreation Opportunity Spectrum classes in the Wilderness as well as a display of key existing and potential recreation areas and sites.

Access

Misty Fiords is being accessed by a variety of means. Fixed-wing aircraft and helicopter have been frequently used in the past decades to bring people to recreation cabins, small resorts, dispersed areas for fishing and hunting, and the to few private land inholdings in the area. Since the area was designated as a National Monument there has been a sharp increase in the use of small and large tour boats to bring visitors into the area, as well as the rapid growth of flightseeing trips by the air charter services. Over the past few years there

has also been an increase in the use of kayaks to access the area. As of now only 10 improved trails provide foot access into interior portions of the Wilderness.

The table below lists the helicopter landing sites that have been documented as being used before ANILCA was passed in 1980

Location	Purpose of Use	No. of Trips	Source
Leduc Lake	fishing, camping	6	Temsco (one pilot's log-Ken Eichner-owner/pilot
Mitchell Creek	fishing	1	"
Chickamin River	minerals, fishing	32	"
High Mtn/Foggy Bay	Electronics site	6	"
Keta River	Minerals	1	"
Misty Fiords-all	Flightseeing, wildlife obs.	3	"
Humpback Lake	Fishing, recreation	8	"
Hugh Smith Lake	Fishing, camping	3	"
Red River	minerals	27	"
Walker Cove	Flightseeing, fishing, photo.	4	"
Goat Creek	Fishing, camping	1	"
Border L./ Johnson Crk.	Overflight	1	"
Big Goat L.	Fishing, camping	4	"
Wilson River	Fishing, recreation	3	"
Rudyerd Bay	Flightseeing	5	"
Wilson Lake	Fishing, camping	1	"
Sikes Pt.	Fishing	1	"
Portage	Recreation, fishing	1	"
Unuk River	Prospecting, recreation	18	"
Borroughs Bay	Recreation	1	"
Grace Creek.	Fishing, recreation	4	"
Boca de Quadra	Recreation	3	"
Chickamin Glacier	Prospecting, recreation	8	"
Ella Lake	Recreation	2	"
Manzanita Lake	Recreation	1	"
Checats Lake	Recreation	1	"
Behm Canal	Recreation	1	"
Grace Lake	Project background	11	"
Blue River	Recreation	2	"
Unuk- Cripple Crk.	Fishing, recreation	1	"
Mirror Lake	fishing, recreation	2	"
Quartz Hill	Minerals	20	"
(Non-wilderness)			
Wilson Arm	Minerals, fishing	4	"

As noted in the table above this information represents the trips of one Temsco pilot to Misty Fiords between 1962 and 1980. Correspondence from Temsco indicate that about 25 other pilots flew helicopters into Misty Fiords for Temsco from the late 1950's to 1980.

Recreation Use

The following table summarizes the recreation use figures for four of the past six years. (In Recreation Visitor Days - RVD's)

Type of Use	1983	1986	1987	1988
Ferry and Cruiseship	45300	65900	51300	55000
Other powered boats (Motorized and sail.)	13700	5200	6900	7200
Canoe and kayak	460	1600	1900	3700
Fixed-wing and Heli.	770	1400	1500	1800
Recreation cabin use	5850	5500	4400	4600
Private lodge use	1420	400	400	400
Hiking		2800	2900	3500
Hunting		1600	1400	1500
Camping		900	900	2000
Fishing		3700	4100	4100
Picnicking		600	700	900
Total dispersed	2150	9600	10000	12000
Totals	69650	89600	76400	84700

Cultural Resources

Many reminders of past human activity are still visible in Misty Fiords. Smoke houses, cabins, canneries and salteries give the visitor clues to the past. Knowledge of the earlier history of cultural activity is still incomplete, but it is known that many generations of people used the land and its resources.

Only 20 of the early cultural resource sites have been discovered within the boundaries of Misty Fiords National Monument Wilderness. Seventeen of these were found by consultants for Sealaska Regional Corporation in conjunction with identifying sites for selection under section 14(h)(1) of the Alaska Native Claims Settlement Act. Others have been identified by Forest Service Archeologists.

Ethnohistoric research indicates that Misty Fiords was once inhabited by at least 4 distinct cultural groups, 3 of which were Tlingit, including the Sanyakwan, Tantakwan, and Xeltlwan (1), and the fourth, the Wetalh, was an Athapaskan group distantly related to the Kaska.

According to the literature, each group had several winter villages, as well as summer camps and associated fish weirs, forts, burial grounds, and caves which they utilized. Thus far, only a scattering of these sites have been verified.

We do not know when people first occupied the land, although the potential exists of sites to date back at least 5,000 years. Sites this old have been identified in Northern British Columbia.

We do know that by the turn of the century the Indians abandoned their traditional villages within the Wilderness. The Wetlth consolidated with the Nishka at their reservation in British Columbia, and the Tlingit moved to Wrangell, Ketchikan, or Saxman--a village built by them in the late 1800's.

Evidence of nonnative culture, of fishing, mining, logging and canning industries, and reminders of pioneers, trappers, and homesteaders who explored Misty Fiords, provide visitors with a more immediate link to the past,

It appears evident from the research that many more early cultural sites are present, and that much more extensive surveys and site testing are needed in the future to discover these, and to construct a more complete history of this Wilderness.

(1) Olson, R.L. 1967. Social structure and social structure and social life of the Tlingit in Alaska. Anthropological Records, Vol. 26. University of California Publications, Los Angeles, CA.

Visual Resources

The high scenic quality of Misty Fiords National Monument Wilderness provides a primary attraction for recreationists. This complex landscape contains a great amount of visual diversity, from beaches exposed to the full force of the ocean, to Matterhorn-type peaks, which exceed 7,000 feet in elevation. The presence of few obtrusive structures and relatively low-use levels leaves the visitor with a strong impression of true wilderness quality.

Misty Fiords contains two distinct "character types", as defined by Visual Character Types, (#R10-63), USDA Forest Service, 1979. The mainland area, which includes the majority of the landmass, falls within the "Coast Range" character type, and the Revillagigedo Island portion falls within the "Coastal Hill" character type.

The visual resource of Misty Fiords including Variety Classes (inherent scenic quality), and viewsheds has not been inventoried at the intensity that the rest of the Forest has. This is primarily because inventoried Visual Quality Objectives (VQO's) for a component of the Wilderness Preservation System are by definition "Preservation" (no man-induced alterations to the natural landscape), or in some exceptions "Retention" (alterations permitted but must not be visible).

Misty Fiords contains numerous highly scenic landmark areas, the most important of which are described below:

Rudyard Bay, a spectacular fiord, is the scenic heart of the fiords. At Punchbowl Cove, the sheer glacially carved cliffs, which raise over 3,000 feet from tidewater, are Rudyard Bay's most dramatic feature, and an important landmark.

The Unuk and Chickamin Rivers are the largest rivers in the entire Ketchikan area. These rivers have their headwaters in the glaciers and snow fields of eastern Misty Fiords and British Columbia. A unique feature of the Unuk is the Blue River drainage, the site of a large lava flow in the early 20th century,

which created Blue Lake and filled the valley with volcanic rock. The Chickamin River, of which the LeDuc is a tributary, has a lesser flow than the Unuk, but has equally high scenic values. Its headwaters lie in the spectacular Chickamin Glacier over 30 miles from its mouth at Behm Canal. The river valley contains great visual diversity, with large meadows, great rounded granite cliffs and all the evidence of recent deglaciation associated with a receding glacier.

Gokachin Lakes, Nooya Lake and Big Goat Lake are especially scenic. They exemplify the diversity of freshwater lakes within Misty Fiords. The Gokachin Lakes are a series of low elevation lakes surrounded by rolling muskeg areas. Nooya Lake, a mid-elevation lake, presents panoramic views to forested slopes and alpine areas. Big Goat Lake, located at 1775 feet elevation, provides direct access to alpine areas, and includes a spectacular waterfall dropping directly from its outlet.

The Chickamin and Through Glaciers, along with extensive snow fields and numerous other smaller valley glaciers, are remnants of the ice and snow which once covered the majority of Misty Fiords. Today, they survive only in the northern and eastern portion of the Monument at higher elevations. The Chickamin Glacier, which is the headwaters of the north fork of the Chickamin River, is an exceptionally scenic resource.

The Ocean Beaches at the extreme southwesterly corner of Misty Fiords, are exposed to the full force of the swells from the Pacific Ocean through the Dixon Entrance. Some white sand beaches are present in this area.

Subsistence

There is very little substantiated subsistence use of fish and wildlife in Misty Fiords. Hugh Smith Lake and Boca de Quadra Fiord are the only locations where subsistence permits for taking of salmon have historically been issued. In 1983, 39 permits were issued for Hugh Smith Lake with a reported harvest of 780 fish. No other subsistence permits were issued in 1983. There is no indication that the amount of subsistence use will increase significantly in this planning period.

There may be limited use of resources, other than fish and game, by residents of private tracts in Misty Fiords. These uses would be primarily firewood gathering and berry picking.

Scientific Values

The establishment of Misty Fiords National Monument Wilderness provides excellent opportunities to the scientific community for both basic and applied research in a wide range of disciplines in the natural and social sciences. The Red River Research Natural Area has long been recognized by the research community for its outstanding sample of Pacific silver fir, which represents the northernmost extension of the species. These opportunities are particularly attractive to the scientist since the natural characteristics of the area can be expected to continue due to the protection afforded by wilderness designation and management. The spectrum of research required for multi-resource management is so broad that no single organization can expect to undertake the many important studies.

Factors which enhance the value of Misty Fiords for the scientific researcher are:

- a. It is a large, protected, relatively undisturbed natural area representing a broad cross-section of Southeast Alaska. Much of this region remains uninterpreted and undescribed.
- b. The geology and geomorphology are characteristic of a large portion of Southeast Alaska, much of which remains uninterpreted and undescribed.
- c. Significant populations of marine mammals frequent adjacent waters.
- d. Special interest wildlife populations, especially brown bear, wolf, bald eagle, and mountain goat, are present and provide unique scientific and educational opportunities.
- e. Native occupation of the coastal areas appears to have continued throughout most of the post-glacial or Holocene Epoch. Since easily accessible areas are the most likely sites of occupation past or present, there is a risk of losing cultural evidence in areas of current use and development. Protected status offers a valuable opportunity to trace and study early occupation along its undisturbed coastline. Cultural resource sites are protected from disturbance more readily in a wilderness due to minimal ground disturbing activities.

(INSERT MAP OF MISTY FIORDS WILDERNESS HERE)

PETERSBURG CREEK
DUNCAN SALT CHUCK
WILDERNESS

ADMINISTRATIVE FACTORS

The Petersburg Creek-Duncan Salt Wilderness is located in Value Comparison Units (VCU) 441 and 445, as identified in the Tongass Land Management Plan (TLMP). The area comprises 46,777 acres of northeastern Kupreanof Island. The eastern boundary is adjacent to the cities of Petersburg and Kupreanof. This wilderness is located entirely on the Petersburg Ranger District of the Stikine Area, Tongass National Forest. A legal description is on file at the Petersburg District Office in Petersburg, Alaska.

PHYSICAL
ENVIRONMENT
Geography

The Petersburg Creek drainage is a typical U-shaped glacial carved valley. Valley walls are steep in some areas with vertical rock wall outcroppings of granite. The surrounding area ranges from mountain peaks reaching to 3,577 feet down to muskeg flats. The Duncan Salt Chuck is a large tidal influenced salt marsh with a rock rapids constricting the mouth of the bay.

Climate

Maritime weather dominates the area. Normal temperatures range from the 40's to mid-70's F. in summer, and from the teens to low 40's F. in the winter. Extreme temperatures occur in both winter and summer when air masses from Canada override the coastal mountains, bringing clear skies and continental air to the archipelago.

Storms and moderate to heavy precipitation occur throughout the year, although storms are most frequent and precipitation is heaviest from September through November. In winter, snow may fall throughout the area with accumulations of up to 50 inches at sea level while the mountain tops may accumulate depths of 200 inches.

Surface winds are moderate to strong throughout Southeast Alaska. Prevailing winds generally blow from the south or southeast, except where local topography influences wind direction. Certain conditions of temperature and pressure gradient may also substantially increase winter wind velocities.

Air

Air Quality in Southeast Alaska is generally very good. There are relatively few major emissions sources in the region, and pollutants are rapidly dispersed by winds and removed by precipitation.

Fire

The incidence of forest fires in the Petersburg Creek - Duncan Salt Chuck Wilderness is extremely low. Summer rainfall and the relative infrequency of summer electrical storms are major factors in reducing wildfire potential. Wildfires are generally small and human caused and due to escaped campfires.

Minerals

As of the March 1, 1989, Bureau of Land Management mining claim report, no mining claims exist in the wilderness. However extensive mineral exploration and claims have occurred in the past. Most of these claims were lode claims. Little evidence remains of this activity. A claim was patented in 1907 which straddles the western boundary of the wilderness. An old wood corduroy road over the muskeg, provided access to the claim and is still visible along the southwestern boundary.

Water Quality

Petersburg Creek (ADF&G #106-44-60), which drains Petersburg Lake (200 acres), is 8 miles long and has a watershed of 34 square miles. The water quality is typical of Southeast Alaska; slightly acidic and stained due to the presence of tannins, but generally free of man-made pollutants.

Salt Chuck Creek (ADF&G #106-43-59), is the main drainage in the Duncan Salt Chuck area. It is 12 miles long and has a watershed of 22 square miles. Salt Chuck Creek is more darkly stained than Petersburg Creek due to the presence of more muskegs in its watershed, but its water quality is as pristine. Several other small drainages occur in the Salt Chuck area; these streams are similar to Salt Chuck Creek in their characteristics.

Soils

The soils landscape of the Petersburg Creek-Duncan Salt Chuck Wilderness can be divided into three distinct landforms; lower bench, timbered valley sidewalls, and alpine areas. The lower bench occurs between sea level and 700 feet in elevation. It is dominated by poorly drained, forested, organic soils and muskeg soils, which are formed in deep glacial deposits over sedimentary and metamorphic bedrock. Soil productivity is low to moderate, due to the predominance of wet soils.

The timbered valley sidewalls occur between 700 feet and 1,800 feet in elevation. They are characterized by steep, well-drained soils formed in shallow glacial till overlaying granitic bedrock. The slopes commonly have numerous v-notches and slide tracks. Soil productivity is moderate to high.

The alpine areas have steep, poorly-drained, organic soils, with some areas of poorly-drained mineral soils, and large areas of exposed bedrock.

Lands

Status- A portion of a 78 acre patented mining claim, is within the wilderness on the west side. Trail right-of-way for the Petersburg Lake Trail, outside of Wilderness, was acquired from the State, private, and City of Kupreanof.

Non-recreation Special Use Permits- A non-recreation special use permit for a communications site, is located on the top of Petersburg Mountain ridge, which is also the boundary of the wilderness.

Temporary Facilities/Camps- There are three special use permit recreation cabins located near the mouth of Petersburg Creek. There are no other permits or temporary facilities or camps.

BIOLOGICAL ENVIRONMENT Fisheries

Streams within the Petersburg Creek - Duncan Salt Chuck Wilderness support runs of pink, chum, coho, and sockeye salmon; anadromous rainbow trout (steelhead), cutthroat trout, and Dolly Varden char; as well as populations of resident cutthroat trout and Dolly Varden char.

In Salt Chuck Creek, coho and chum salmon runs are below their historic levels, while the steelhead, cutthroat trout, and Dolly Varden char populations are at or near normal levels. Pink salmon have never been numerous in this drainage.

The pink salmon run in Petersburg Creek is at or above historic levels, while the coho, chum, and sockeye runs are depressed. The steelhead run had experienced a downward trend, but appears to be rebounding; the cutthroat trout and Dolly Varden char populations are strong.

Wildlife

The streams, lakes, beaches, wooded areas, alpine areas, and muskegs provide a diversity of habitat and an abundance of food and cover which support a variety of wildlife species, including:

Bald Eagle	Beaver
Sitka Black-tailed Deer	Marten
Black Bear	Weasel
Moose	River Otter
Timber Wolf	Mink
Grouse	Trumpeter Swan
Geese	Wolverine

The area supports both nesting and migratory waterfowl in significant numbers, including the trumpeter swan. Deer numbers are presently low throughout the area.

Vegetation

Forest stands in the Petersburg Creek-Duncan Salt Chuck Wilderness are composed primarily of western hemlock and Sitka Spruce, with minor amounts of Alaska-cedar. Dwarf mountain hemlock and lodgepole pine are found in the muskegs and alpine areas. Alder is found along the streams and dominates the snowslide and landslide areas.

The forest understory is dense in the old-growth timber stands and is comprised primarily of blueberry, rusty menziesia, and devil's club. Sphagnum moss, sedges, rushes, and shrubs are commonly found in the muskegs. Low, mat-forming vegetation adapted to snowpack and wind abrasion such as heaths, grasses, copper bush, and deer cabbage dominate the alpine areas.

No threatened or endangered species are known to exist in the study area.

SOCIAL ENVIRONMENT

Wilderness

Natural Integrity - The natural integrity of the Petersburg Creek - Duncan salt Chuck Wilderness is high. The entire watershed of Petersburg Creek is within the wilderness boundaries hence protecting its integrity. The natural integrity of Salt Chuck Creek is intact, however the upper portion of the drainage is outside of the wilderness and is currently being studied for land management activities.

Apparent Naturalness- The general appearance of the wilderness is that it has not been altered by humans. There are six cabins spread throughout the area and about ten miles of developed trail. In addition, there is a small 30 to 40 year old clearcut within sight of town which straddles the Wilderness boundary. It is visually unobtrusive. These alterations are virtually insignificant to the overall area.

Opportunity for Solitude - This wilderness provides good opportunities for solitude. These opportunities are reduced when traveling on salt water, walking the trails, or visiting a cabin. The Petersburg Creek drainage is used frequently by low flying aircraft which does impact the opportunity for solitude. Due to the proximity of Petersburg, the lower reaches of Petersburg Creek are used for day and weekend recreational use, and thus the degree of solitude is reduced. Additional impacts to this area of the wilderness can be anticipated with development of private land in the city of Kupreanof.

Opportunity for Primitive Recreation - The opportunities for primitive recreation are good, and include; good fishing for steelhead, pink salmon, and coho salmon, waterfowl and black bear hunting in the salt chuck, camping, hiking, and nature photography.

Recreation

Public Facilities- The close proximity of the Petersburg Creek - Duncan Salt Chuck Wilderness to Petersburg results in extensive use of the area. A Forest Service public use cabin exists on Petersburg Lake, accessible by trail or float plane. There are two Forest Service public use cabins in the Duncan Salt Chuck Area. They are accessible by boat or float plane.

Site Name	Location	Capacity
Petersburg Lake Cabin	Petersburg Lake	4
Salt Chuck East Cabin	N. Arm Duncan Canal	7
Salt Chuck West Cabin	N. Arm Duncan Canal	4

Trails- The Petersburg Lake Trail is a plank trail that extends from the area boundary near saltwater to the cabin at Petersburg Lake. The lake is large enough to accommodate float planes, further facilitating access. A primitive hiking trail extends from the Petersburg Creek cabin to the Salt Chuck East cabin forming the second leg of a planned loop trail around Portage Mountain. A summary of recreation trails follows:

Trail Name	Number	Length
Petersburg Lake Trail	#534	10.5 miles (6.5 miles inside wilderness)
Portage Mt. Loop Trail	#535	10.5 miles (primitive trail)

Commercial - There are currently no permitted outfitter/guide activities within the wilderness. Interest has been expressed for a permit to guide during 1990 for fishing. It is also likely that undocumented activities have taken place in the past. No pre ANILCA commercial visitor services existed under permit in this area.

Dispersed Use- Fishing and hunting are the dominant recreation activities in this Wilderness. Petersburg Creek receives the heaviest fishing pressure and provides excellent opportunities for catching steelhead, sea-run cutthroat trout, Dolly Varden char, coho, and pink salmon. Some angling for resident cutthroat trout and Dolly Varden char occurs in Petersburg Lake.

Fishing pressure in the Duncan Salt Chuck area is considerably lighter than in Petersburg Creek. The area offers opportunities to catch steelhead, sea-run cutthroat trout, sea-run Dolly Varden char, pink and coho salmon.

The Duncan Salt Chuck is a popular waterfowl and bear hunting area. Some grouse hunting also occurs. The Petersburg Creek drainage receives some waterfowl and grouse hunting pressure, but is closed for bear hunting. All of Kupreanof Island is closed to deer hunting at this time.

The Wilderness is also utilized to a lesser degree for hiking, photography, and for some, simply as a place to escape the pressures of modern life.

Recreation Opportunity Spectrum- The roughly 47,800 acres can be broken down into the following ROS classes: 6,900 acres (14%) in PI; 17,200 acres (36%) in PII; 12,300 acres (26%) in SPNM; 11,400 acres (24%) in SPM.

Access - The area is accessible by boat on both the east and west. From the east one can travel up Petersburg Creek at high tide and penetrate the Wilderness for a distance of about one mile. From the west side access is via Duncan Canal.

The Petersburg Lake Trail provides foot access through the Wilderness, from the city of Kupreanof to Petersburg Lake. This is a planked trail and is relatively easy. Another trail, Portage Mountain Loop Trail, is more primitive and provides access from Petersburg Lake to Portage Bay, then to the Salt Chuck East cabin.

Floatplanes traditionally provide access to Petersburg Lake and the Salt Chuck. Their use is usually associated with accessing cabins and/or hunting and fishing.

Pre-ANILCA Helicopter use- Helicopter use of the area has been minimal. There are no know routine public helicopter uses in the area. However some use has occurred. This is supported by a letter from Temco Helicopter, Inc. dated August 22, 1988. It mentions two areas in the Wilderness where use occurred prior to 1980, and the designation of the area as Wilderness. One general area extends from the upper end of Petersburg Lake and down the valley to the mouth of Petersburg Creek. The purpose of the trips for the Petersburg Creek area were for fishing, camping, and transporting materials and supplies for homesites and cabins. This use is described as 5-25 trips/year. The other area is the vicinity of the North Arm of Duncan Canal. The purpose of these trips was for fishing and camping, and use is also described as 5-25 trips/year.

Recreation Use- The heaviest use of the area occurs in the Petersburg Creek drainage because of relatively easy access by two methods:

1. By boat from the town of Petersburg to the wilderness boundary on lower Petersburg Creek (4 miles distance). Access to the trail is possible from here.
2. By boat from the town of Petersburg to the State dock on Kupreanof Island (1/2 mile distance); then by trail (5 miles distance) to the wilderness boundary. This trail crosses City of Kupreanof, State of Alaska, private and Forest Service land. The Forest Service has acquired a right-of-way for the trail through these lands.

A summary of total recreation use for the Wilderness over the past five years is as follows.

Year	Total RVD's	RVD's By ROS Class			
		Primitive I	Primitive II	SPNM	SPM
1984	2,874	57	1,150	230	1,437
1985	2,548	51	1,019	204	1,274
1986	3,044	60	1,218	244	1,522
1987	4,960	99	1,984	397	2,480
1988	7,545	151	3,018	604	3,772

Cultural Resources	<p>Little is known about the native peoples who utilized the area now encompassed by the Petersburg Creek - Duncan Salt Chuck Wilderness. Interviews conducted in 1946 have led archaeologists to believe portions of the area were utilized by the Talkwedi and Kaskukewedi Tlingit groups.</p> <p>Extensive prospecting and a limited amount of mining took place in the area during the late 19th and early 20th century. At least one group of claims was staked out by the Portage Mountain Mining Company, which operated the claims on a relatively small scale, using small, open cuts into the hillsides.</p> <p>During the 1930's and early 1940's, the Federal Government's Civilian Conservation Corp worked in the area, building trails and clearing brush.</p>
Visual Resources	<p>The Petersburg Creek - Duncan Salt Chuck Wilderness is comprised of a variety of landscape character types. The close proximity of the Petersburg Creek drainage to Petersburg results in moderate to high use and an increase in viewer sensitivity. Traveling upstream towards Petersburg Lake, one is surrounded by steep, heavily timbered hillsides. Within the creek's corridor man's presence is apparent; three special use permit cabins are located within the Wilderness boundary and there is a Forest Service plank trail that parallels the creek from the Wilderness boundary upstream to a Forest Service recreation cabin located on Petersburg Lake. The Petersburg Lake view shed is also dominated by steep, heavily timbered landforms.</p> <p>The Duncan Salt Chuck area exists in a relatively pristine state. The intertidal area is dominated by broad grassflats. Two Forest Service recreation cabins are located in this area, but are relatively inconspicuous. Traveling up Salt Chuck Creek, one encounters timbered areas interspersed with muskeg. Views to the adjacent mountains are in the range of middleground to background viewing distance. These slopes are heavily timbered, leading to alpine areas.</p>
Subsistence	<p>Subsistence plays a moderate role in the lifestyle of residents of Kupreanof and Mitkof Islands. Fish in the Petersburg Creek drainage and fish/waterfowl/black bear in the Salt Chuck drainage, appear to be the primary subsistence resources utilized by these residents. Harvested fish and game are generally acquired through recreational activities. Thus in this Wilderness, subsistence and outdoor recreation are interrelated. No known residents are currently dependent on these resources for a livelihood or existence. State fish and game regulations do not currently give priority to subsistence use or users in this area.</p>
Scientific Values	<p>The area is classified by the State as a Black Bear Observatory. No other specific values have been identified, however the proximity to Petersburg may make the area attractive for various research efforts.</p>

(INSERT MAP OF PETERSBURG CR./DUNCAN SALT CHUCK WILDERNESS HERE)

RUSSELL FIORD
WILDERNESS

ADMINISTRATIVE FACTORS

Location The Russell Fiord Wilderness is a part of the Tongass National Forest, Chatham Area and is administered by the Yakutat Ranger District. The wilderness area is designated under the Tongass Land Management Plan (TLMP) as management area C52 and is composed of value comparison units 352C through 365C, 374C, and 378C. The wilderness area contains 348,701 acres and lies 25 miles northeast of Yakutat, between the Fairweather Range to the northeast and the Brabazon Range to the southwest. The eastern boundary of the wilderness area borders the Brabazon Range addition to the Tongass National Forest. A legal description is on file at the Yakutat District Office in Yakutat and at the Forest Supervisor's Office in Sitka, Alaska.

Administrative Facilities Russell Fiord Wilderness is managed out of Yakutat and has an office, a house for the district ranger, a trailer and bunkhouse for housing, and a warehouse compound for storage of equipment.

PHYSICAL ENVIRONMENT

Geography The central feature of the wilderness area is the heavily glaciated Russell and Nunatak Fiords. This two-armed fiord has great scenic variety, with many hanging glaciers, valley glaciers, and rugged peaks. Much of Russell and Nunatak Fiords have been dramatically modified by earthquakes and glacial activity. Steep cut valleys intersect the fiords and high moraines of raw earth and rock are piled on the valley floor. Early ecological succession is evident in all valleys.

Nunatak Fiord extends approximately 14 miles eastward from its mouth. It is narrower than Russell Fiord and the mountains bordering it are more rugged and rise abruptly from sea level to heights of 3,000 to 4,000 feet. The sides of Nunatak Fiord are almost devoid of plant life. A new forest of cottonwood, alder, lupine, and fireweed are the primary pioneering plants.

A spectacular feature of this fiord is the "The Nunatak", a bare rock outcrop surrounded by ice that has been exposed by the recession of the west Nunatak Glacier.

In the southern portion of Russell Fiord near Beasley Creek, Situk and Mountain Lakes, the terrain is more rolling; black cottonwood and Sitka spruce cover the area.

Russell Fiord extends the ocean 35 miles inland from Disenchantment Bay. Remnants of one-time tidewater glaciers can be seen in most of the valleys in Russell Fiord. Variegated Glacier, just east of Hubbard Glacier, has had a history of spectacular surges between 1905 and 1986. Field investigations are currently under way to determine what causes this surging or "galloping" phenomena.

The Hubbard Glacier, at the fiord's entrance, has a 300 foot high sheer ice face that is currently advancing. This tidewater glacier is extremely active, calving great slabs of ice into Disenchantment Bay. In the early 1970's, rapid advancement caused many scientists to speculate that the glacier would close the mouth of Russell Fiord, forming a freshwater lake.

Over 70 miles long, the Hubbard Glacier has been in an advancing stage since the turn of the century. During the summer of 1986, Hubbard Glacier advanced across the mouth of Russell Fiord sealing it off and creating the worlds largest glacier-formed lake (Russell Lake). The Hubbard Glacier Geological Area was designated on August 25, 1986 by Secretary of Agriculture Richard E. Lyng. This is the 15th Geological Area nominated within the National Forest System, but the first glacier selected. It includes 46,000 acres within the Russell Fiord Wilderness of the Tongass National Forest. Geological Areas must have outstanding formations or unique geologic features to be designated.

Based on geologic and hydrologic history, the Hubbard Glacier is now going through part of a thousand-year cycle that encompasses major changes in the hydrology of a large and complex system. About 800 years ago the glacier filled both Disenchantment Bay and Yakutat Bay and extended out into the Pacific Ocean. Russell Fiord was blocked off by the wall of ice and became a lake draining into the ocean along the channel today known as Old Situk Creek.

All evidence indicates the glacier will continue to advance. Scientists predict three possible scenarios for the near future of Hubbard Glacier. First, it could form another ice dam similar to the one formed in 1986 which could again outburst. There could be several cycles of ice damming and outbursting.

Another possibility is that the glacier could close Russell Fiord and as the water level in Russell Fiord rises, the face of the glacier could float and enormous masses of ice could break off contributing to a "massive" outburst that would change the dynamics of the glacier sending it into a massive retreat.

The third, and apparently most likely scenario, is that the Hubbard Glacier will continue to advance and firmly block off Russell Fiord, creating Russell Lake. The lake will then rise to the height of the Old Situk Creek outlet at the southern end of the fiord. A major river will be reborn.

The USDA's Forest Service, the major federal land management agency in the area of potential impact, is leading a local, federal and state effort to provide for the security of local residents. Work is also being done to evaluate and plan for possible measures to alleviate the adverse impacts associated with the event. While the Geological Survey continues to monitor and study the behavior of the glacier, the Forest Service and others are studying potential impacts on fisheries, wildlife and other natural resources. Detailed topographic mapping was finished in 1987 and a floodplain analysis completed a year later, which will determine the most likely size and location of the new river.

Primary cooperators in the effort include the USDA Forest Service, National Park Service, Wrangell-St. Elias National Park and Preserve, U.S. Coast Guard, U.S. Fish & Wildlife Service, U.S. Geological Survey, U.S. Army Corps of Engineers, State of Alaska, Yak Tat Kwaan, Sealaska Corporation and others.

Climate

The Yakutat area is surrounded on two sides by the waters of the Gulf of Alaska and Yakutat Bay; the climate is maritime in character. Normal monthly temperatures range from slightly above 26 degrees in January to around 53 degrees in July and August. Although Yakutat has experienced a record low of -22 degrees, readings approaching this figure are extremely rare. Yakutat averages only ten days each year with temperatures below zero. July and August are the only months of the year temperatures have gone above 80 degrees.

The up-slope terrain, combined with exposure to moisture-laden air from the Gulf of Alaska, provides Yakutat with abundant rainfall (orographic lifting). The average annual precipitation of 134 inches is one of the greatest in Alaska. June has the lowest average precipitation of any month with around 5 inches. October, with an average of almost 20 inches, has the heaviest monthly rainfall. Snowfall has occurred in all months of the year except June, July and August. Heaviest snowfalls usually occur in March with 111 inches the greatest amount recorded in one month and 32 inches in one day. Cloudiness is abundant with the average annual cloudiness exceeding 8/10's sky cover. During the spring, fall and winter months, the Yakutat area is subjected to numerous storms usually accompanied by high winds. During the summer, however, the weather is frequently cloudless and delightful for weeks at a time.

Air

Air quality in Southeast Alaska is generally very good. The region contains no designated non-attainment areas for air quality. There are relatively few major emission sources in the region, and pollutants are rapidly dispersed by winds and removed by precipitation. Air quality in the state is regulated by the Alaska Department of Environmental Conservation.

Fire

The incidence of fire in Russell Fiord is extremely low. Summer rainfall and the infrequency of summer electrical storms are major factors for a low fire hazard in this area. Any fires that occur would be man-caused.

Minerals and Mining History

Mining activity in the Yakutat area dates back to the 1800's but has been on a small scale and intermittent. Only placer deposits are known to have existed. The historical location of deposits has been the beach sands along the coast. Investigations have indicated that only minor quantities of precious metals exist in the gravels along the beaches and uplifted beaches where wave action has concentrated them. Concentrations of magnetite and limonite have also been found in these beach deposits, but they are not believed to be economically important at this time. Mineral production has been minimal. Twenty-three mining claims do exist within the wilderness area. These claims were all filed with the Bureau of Land Management in December 1983 which was the last month mining claims could be filed in a wilderness area.

Water Quality

Streams are of both glacial and non-glacial origin. Sediment laden streams and tidewater glaciers give the salt and freshwater a milky appearance. With the exception of a few small streams near recent mineral activity, it is generally thought that the scope of past and present activities do not have the potential to significantly alter or cause long lasting water quality degradation. Overall water quality is expected to remain high. Ground water in the Yakutat Forelands is present in abundant quantity, even in years of less than abundant rainfall.

If the Hubbard Glacier closes off Russell Fiord for any length of time and creates Russell Lake, the Old Situk Creek would be reestablished with an initial flush of diluted salt water which would be replaced primarily by fresh water flowing through the system. Fresh water is "lighter" than salt water and would flow over the "heavier" salt water in Russell Lake. The overall water quality of the Yakutat Forelands would be affected very little, if at all.

The standard for water quality management in this area is Standard C according to Alaska Department of Environmental guidelines.

Soils

Glacial action as well as frequent earthquakes and fault action are responsible for much of the landforms and soil types within the area. Varying soil types, both mineral and organic, are present and reflect the still changing nature of this relatively "new" area.

Soil depths range from none at all on rock outcrops and steep escarpments to many meters in depositional areas. Organic layers on the surface are generally thin. Some areas consist of very well drained alluvial sands, gravels and cobbles with a high water table. Other soils are very poorly drained outwash sands with silty, clay-loam and a surface water table. Fluvial erosion and deposition continue to modify extensive areas.

Bedrock may be exposed or covered by very thick glacial moraine deposits of undifferentiated materials--mainly till and some lake deposits. Deposition is still occurring. Older rocks in alpine areas include argillite, greywache and conglomerate argillite with slate and some schist. Volcanic greywache, altered greenstone with argillite and chert, small bodies of granite, and intrusive igneous rocks have been identified.

Lands

Land Status: Currently there is no nonfederally owned land within the wilderness area. However, there are 12 Native allotment claims that remain in uncertain status. Further processing of these allotment claims by the Bureau of Land Management and a recent U.S. Supreme Court decision regarding such allotments may clear up many of these claims in the future. The allotment claims range in size from 10 to 100 acres and represent a total of 510 acres. In addition, there are two Alaska Native Settlement Claims Act Section 14(h)(1) sites within the wilderness area.

Non-Recreation Special Use Permits: The Russell Fiord Wilderness currently has 10 special use permits that cover the following activities: landing zones for wheel, ski, and float planes; fishing camps; hunting camps; seismic study sites for monumentation and instrumentation; seal hunting; trapping; and an agricultural residence. These permits include improvements such as cabins, tent frames, shelters, and aircraft landing markers.

Cabins and tent frames are located throughout the wilderness area. These improvements are used primarily for subsistence activities such as hunting and fishing and for outfitter/guide operations. Concentrated use areas are at Chicago Harbor, Disenchantment Bay, and the Nunatak area. In addition, the Situk corridor to Mountain Lake has been moderately used. Use at Chicago Harbor is primarily for halibut and salmon fishing. Activities in the Disenchantment Bay area have been primarily for seal hunting. The clustered tent platforms and small cabins at Nunatak have been used for the late fall - early winter moose hunting, and occasionally for goat hunting.

Table XX
NON-RECREATION SPECIAL USE PERMITS

Location	Special Use	Holder
Disenchantment Bay	fish camp	private
Mountain Stream	fish weir	ADF&G
Situk Lake	fish camp	private
Harlequin Lake	cabin	private
Eleanor Cove	cabin	private
Eleanor Cove (3)	fish camp	private
Knight Island	agricultural residence	private
Russell Fiord Wilderness (3)	seismic monitoring sites	USGS

BIOLOGICAL ENVIRONMENT

Fisheries

The Russell Fiord Wilderness area contains three lakes: Mountain, Situk, and Harlequin Lakes, and a large number of short streams. Stream features indicate that most of the systems could be used by anadromous fish.

Mountain and Situk Lakes receive sport fishing pressure by anglers fishing for rainbow trout and Dolly Varden char. The lakes are not fished commercially, but they are the headwaters of the Situk River, which contributes to the commercial fishery in Yakutat.

Harlequin Lake receives very little, if any, sport fishing use due to its glacial turbidity. The small intermittent commercial fishery in Harlequin Lake was permanently closed by the Alaska Department of Fish and Game, beginning with the 1985 fishing season. The Department felt this action could be taken because the fishery was insignificant and that other areas on the Forelands provide enough opportunities for the commercial fish harvest.

There is limited commercial fishing within the wilderness area. Some king crab are taken eastward of Nunatak, but the quantity is not large. No fishery enhancement projects have been identified within the wilderness.

Wildlife

The Russell Fiord Wilderness area contains a diverse range of wildlife species. The area has been relatively undisturbed so wildlife viewing opportunities are considerable and change seasonally.

Moose are generally considered one of the prime interest species within this wilderness. Early successional vegetative growth and nearby timber cover enable moose to flourish. In the past, there were two separate moose hunts held in this area. The most popular, and current, hunt is located in Alaska Department of Fish and Game Management unit 5A (Unit 5A extends from Yakutat Bay to Cape Fairweather) except Nunatak Bench. Up to 50 bulls can be taken and normally 5 bulls are taken within the wilderness area.

The Alaska Department of Fish and Game has estimated that there is a stable population of approximately 1,000 moose in Unit 5A which may allow for an increase in the moose harvest to approximately 70 moose. The Moose Management Plan for the area allows for this increased harvest contingent upon the Game

Management Boards' recommendations (December 1989). This could lead to an increase in the moose harvest inside the wilderness area.

The second hunt was located completely within the wilderness in the Nunatak Bench area. This hunt was closed in 1986 after the Hubbard Glacier closed off Russell Fiord. The elevated water levels in the Nunatak Fiord killed much of the vegetation the moose feed on in the Nunatak Bench area. This hunt used to occur between November 15 and February 15. It was very popular with the local residents. Up to 10 moose could be harvested. The Department of Fish and Game is considering this hunt again depending on what happens with the Hubbard Glaciers' anticipated movement.

Mountain goats and black bears can be observed on the vegetated hillsides below the alpine just east of Harlequin Lake during late summer and fall. In the spring, black bears are found along the shores of Harlequin Lake.

A total of 139 species of birds, comprising 14 orders, were recorded in a study in 1980. Aquatic-oriented birds comprised over half of the species recorded in the study. The wilderness area supports important waterfowl concentrations in late summer, autumn and winter. Trumpeter swans, once listed as a threatened species, occasionally nest in the wilderness and regularly nest on the Yakutat Forelands. Migratory waterfowl, sandhill cranes, and significant concentrations of ptarmigan are found in the Harlequin Lake - upper Dangerous River area. The lake itself is the moulting area in late June and July for nonbreeding Canada geese. Mew gulls and Arctic terns nest on the gravel bars of the lake.

Vegetation

Several plant species and communities that are not common in Southeast Alaska can be found in the wilderness area. Although no threatened or endangered plants are known to occur within the wilderness, Colville, in 1899, did identify a unique grass known as Poa merrilliana (A.S. Hitchcock) from the Hubbard Glacier area in Disenchantment Bay. This plant is referenced in current literature but is considered a "doubtful species". It is possibly a phenotypic variation of some other true species. Only one plant was located by Colville and no one has examined the area recently. However, this plant is currently proposed as a threatened or endangered species in the Federal Register.

SOCIAL ENVIRONMENT

Wilderness

The wilderness area is substantially free of controls and not subjugated to civilized influences. Visitors can be in large areas for days and never see or hear a sign of civilization. There are many unnamed peaks, streams, and valleys and one can sense the chance for self discovery. Several types of activities within the wilderness area affect its absolute wilderness values. Those activities include commercial fishing and shrimping in Disenchantment Bay; seal hunting from power boats at the face of Hubbard Glacier; outfitter-guide base camps; low level flight-seeing; hunting parties; subsistence camps; and kayaking. Those activities do not presently constitute adverse impacts to the wilderness.

The wilderness area abounds in prime wilderness characteristics. The terrain and climate, influenced by the remote and difficult access, challenge the self-reliance and outdoor skills of any individual. The opportunity to enjoy a variety of unconfined primitive recreation experiences is free of restrictions or permits. Much of the wilderness area is unvisited and the need for administrative control is minimal. There are few publications or wilderness

guides describing what to expect around the next bend or providing general information. The opportunity for self-interpretation and exploration dominates.

The major evidence of other users or of human alterations is confined to the subsistence tent camps of Nunatak Beach and Chicago Harbor, the four airstrips within the fiord, the recreation cabin, 3 miles of trail, and scattered outfitter-guide base camps.

Recreation

Public Facilities: There is one Forest Service public use cabin at Situk Lake.

Trails: There is a total of 3.7 miles of trail within the Wilderness: Harlequin Lake (0.7 miles, trail # 655), Mountain Lake (2 miles, trail #652) and Situk Lake (1 mile, trail #659). The Situk Lake trail totals six miles in length but only one mile is inside the wilderness boundary. The trails typically have a low level of use and the maintenance standard is for resource protection instead of user convenience.

Commercial Operations: There are currently four commercial outfitter-guide permits in the wilderness area. Commercial uses of the wilderness have increased substantially in recent years. The primary commercial uses involve guided hunting trips and guided or outfitted kayak trips. There are 8-9 tent platforms used by three different outfitter/guides as bases for their hunting trips. The hunting guides are operating out of base camps located in the wilderness area. Bear hunting guides commonly operate at Moser Creek, Cape Enchantment, Chicago Harbor, and Mountain-, Situk-, and Harlequin Lakes.

There is one kayaking outfitter/guide who is operating exclusively within Nunatak and Russell Fiords. Use by this outfitter/guide predates ANILCA. Some nonconsumptive uses, such as kayak trips, have been viewed by local residents as a threat to their tradition and cultural consumptive uses.

Dispersed Use: Dispersed recreation involving the use of boats, float planes, and camping gear, rather than developed facilities is a popular form of outdoor recreation in Southeast Alaska. Boating, sightseeing, and beach-oriented activities predominate. Within Russell and Nunatak Fiords, wildlife viewing, sightseeing, and ocean kayaking are becoming increasingly popular.

Recreation Opportunity Spectrum (ROS)

The Recreation Opportunity Spectrum inventory system provides a framework to manage land and water resources by providing an understanding of the dynamic nature of the recreation resource and the complexity of its management. The five recreation classes identified within the wilderness area provide a range of differing physical and social circumstances that lead to different recreation activities and experiences. The Primitive classes represent the most remote, undeveloped, and inaccessible opportunities, while the Roaded Modified represents the most developed and accessible experience available in the Russell Fiord Wilderness.

Table XX

Recreation Opportunity Spectrum (ROS)

ROS Class	Acres	% of Total Acres
Primitive I (PI)	263,500	75

Primitive II (PII)	68,800	20
Semi-Primitive Nonmotorized (SPNM)	11,200	3
Semi-Primitive Motorized (SPM)	3,500	1
Roaded Modified (RM)	2,100	1

Access: Access to the fiords is predominantly by float or wheel plane out of Yakutat. The Situk Lake cabin is accessible by float plane, a six mile trail from Forest Highway 10 or in winter, by snowmobile, skis, or snowshoes.

Power boats are noticeably absent within the fiords, which is attributed to the difficulty of navigating through the ice and currents at Osier Island. Much of the area is composed of rugged peaks, glaciers and icefields which severely restrict access.

Pre-ANILCA Helicopter Use: Scoping indicated that ERA Helicopters of Juneau landed on the Variegated Glacier for glacier work by academic universities on a more or less regular basis prior to ANILCA.

Recreation Use: Recreation use records for Russell Fiord are lacking or incomplete. The numbers displayed below are Recreation Visitor Days (RVD's) with one RVD being the equivalent of one person recreating for 12 hours. These numbers are presented as a best estimate.

1988	no records
1987	420 RVD's
1986	1940 RVD's
1985	820 RVD's
1984	no records

Cultural Resources

The cultural resources of the Russell Fiord Wilderness are limited but very important. The known sites consist of a village, a fort site, a battle site and many subsistence sites, including seal hunting sites. Only limited resource inventories have been conducted.

Visual Resources

This visual character type is coast range. In comparison to other character types in southeast Alaska, scale of landforms are generally large, massive and give an impression of great bulk. Uplands are generally 5000 to 7000 feet in elevation dissected by deep steep-walled U-shaped valleys. Mountain ridges are generally rounded summits but are surmounted at times by aretes and horns rising 8000 to 9000 feet. The large saltwater fiords protruding into this character type are sometimes extremely steep-sided, affording great visual relief because of the abrupt differences in elevation.

This character type exhibits a great variety of geological features. Cliffs, rock escarpments, smooth glacially scoured faces and at higher elevations jagged peaks, spires and cirques are evident. Shorelines vary from rocky bluffs to sand beaches.

Virtually the entire wilderness is in Existing Visual Condition 1 where the land appears to be untouched by human activity.

Subsistence

Subsistence activities in the Yakutat area are deep rooted and important to the local residents.

The most important subsistence activity of Yakutat residents is salmon fishing. Subsistence permits allow the holder to set net for salmon for home use, usually during the forty-eight hours before and after the commercial season opens. Most subsistence set netting is done at the Situk River, Monti Bay and Sawmill Cove. Sport fishing for such food species as steelhead, cutthroat trout, and Dolly Varden is also popular locally, with the Situk River and Ankau Creek favored for this activity. Ophir Creek is traditionally important to older people who catch "redfish" (i.e., spawned-out red and coho salmon) there in the fall.

Some residents also harvest eulachon (hooligan or candlefish) during their run in February and March, with the most popular harvest spots being Situk- and Lost Rivers and Summit Lake.

Hunting for harbor seals was formerly an important spring subsistence activity, with established seal camps at Disenchantment Bay. Some residents still hunt seals, primarily in Redfield Cove, Eleanor Cove, and Disenchantment Bay. Seal hunting on ice takes place from Pt. Latouche to Osier Island.

The close connection between subsistence activities and recreation at Yakutat has been noted by many researchers. A 1978 study documented traditional and present subsistence use by Yakutat residents of the entire Gulf of Alaska region from Cape Suckling to Cape Fairweather. While subsistence activities are carried on throughout the region, the areas of most intensive use were found to be eastern Yakutat Bay and the Yakutat Forelands west of Dangerous River, along with Disenchantment Bay, and Icy Cape. A measure of continuing economical and cultural importance of subsistence food gathering at Yakutat can be derived from a 1975 socio-economic survey which found that 56 percent of Yakutat area households obtained a quarter or more of their food from subsistence activities.

In 1986 The Alaska Department of Fish & Game, Division of Subsistence, published a report entitled, "Fish and Wildlife Use in Yakutat, Alaska: Contemporary Patterns and Changes" (Technical Paper 131) submitted by David D. Mills and Anne S. Firman. The intent of the paper was to document the changes in resource uses in the dynamic community of Yakutat both in the past and present. The field work was done in 1984 with subsequent interviews over the winter. The basic figure for fish and wildlife use was 368 lbs./capita. This figure does not account for the sharing-network that exists within the community. Not all the resources consumed are harvested equally across the community.

The Tongass Resource Use Cooperative Study, done in 1988, indicated that total fish and wildlife resource use increased to 398 lbs./capita. In both cases, fish was listed as the primary resource consumed.

The Ruseell Fiord Wilderness' principal contributions to subsistence activities have been moose, seals and crab. Most of the fish harvest activities occurs on the Forelands.

Recreation at Yakutat is strongly oriented toward outdoor recreation activities, such as hunting, fishing, boating, hiking, and beachcombing for residents as well as the visitors. For local residents, however, the most popular recreation activities and use areas are also important for subsistence food gathering activities. The two activities are essentially inseparable.

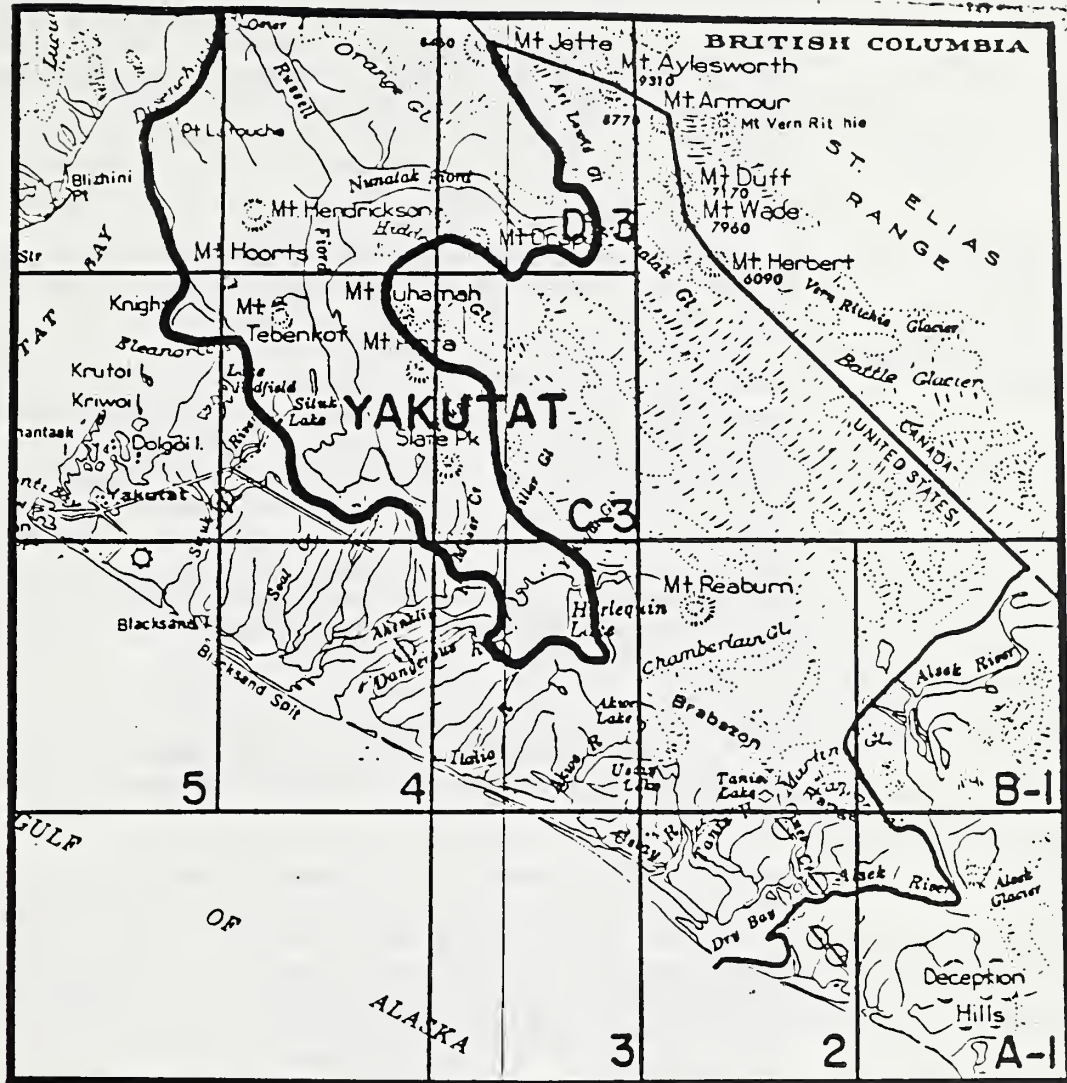
The most popular areas for subsistence activities and recreational boating are the relatively protected waters of the many bays, channels and coves formed by

the islands and indented coastline of Monti Bay and eastern Yakutat Bay. These include Monti Bay (subsistence and commercial set netting, shellfish), Puget Cove (trolling for king and silver salmon), and Eleanor Cove/Chicago Harbor (trolling for king and silver salmon, herring eggs, and sealing). The intertidal areas of the beaches in these areas also yield a variety of beach foods, such as clams, cockles, chitons and seaweeds, which are collected by some residents.

Scientific Values

The highest scientific values of the Russell Fiord Wilderness are glacier related. Much of the area is recently glaciated and there are still many active glaciers. Of particular interest is the advance of the Hubbard Glacier which closed off the fiord and created a lake in the mid-1980's. Studies by the U.S. Geological Service to determine glacier movement and activity are currently ongoing.

(INSERT MAP OF RUSSELL FIORD WILDERNESS HERE)



RUSSELL FIORD WILDERNESS

SOUTH BARANOF
WILDERNESS

ADMINISTRATIVE FACTORS

Location

Baranof Island, on which the South Baranof Wilderness is situated, is located in the northern portion of the Alexander Archipelago, a long string of islands that make up the island portion of southeastern Alaska. Baranof Island is joined with Admiralty and Chichagof Islands as the Admiralty - Baranof - Chichagof - Physiographic Region. South Baranof Wilderness is approximately 319,568 acres in size, and includes VCU's 329 through 333 and 344 through 348. The South Baranof Wilderness is located entirely on the Sitka Ranger District of the Chatham Area, Tongass National Forest. A legal description is on file at the Sitka Ranger District Office and at the Forest Supervisor's Office in Sitka, Alaska.

Administrative
Facilities

The South Baranof Wilderness is administered out of the Sitka Ranger District office. There are no administrative facilities in the Wilderness.

PHYSICAL ENVIRONMENT

Geography

South Baranof Wilderness is an area of high mountains rising from sea level to approximately 4,000 feet elevation within two or three miles from the beach. The highest point in the area is Mt. Ada, elevation 4,528 feet. A large percentage of the higher elevations are covered with permanent snowfields and some active glaciers. Valleys are typically glaciated U-shaped, and contain many cirques and hanging valley lakes, with waterfalls near the coast. These valleys contained glaciers extending to the coast during the most recent period of glaciation. Most of the valleys empty into the head of deep fiords which extend several miles inland from the outside coast. Generally, timberline is approximately 2,000 feet above sea level.

South Baranof Wilderness has the same wide range of resources found throughout most of southeast Alaska. The recreation and wilderness attributes of the area are enhanced by its inaccessibility and wild character, particularly on the Gulf of Alaska side.

Climate

Maritime weather dominates this wilderness. Normal temperatures range from the 40's to mid 60's F. in summer, and from the high teens to low 40's F. in winter. In summer, cooler temperatures occur on or near the outer coasts while warmer temperatures prevail farther inland. In winter, the reverse is true. Extreme temperatures occur in both winter and summer when air masses from Canada override the coastal mountains, bringing clear skies and continental air to the archipelago.

Storms and moderate-to-heavy precipitation occur throughout the year, although storms are most frequent and precipitation is heaviest from September through November. In winter, snow falls frequently throughout the region and accumulations of 60 to 100 inches or more are not uncommon. At higher elevations more than 200 inches of snow may fall and accumulate each year.

Surface winds are moderate to strong throughout Southeast Alaska. Prevailing winds generally blow from the south or southeast, except where local topography influences wind direction. Certain conditions of temperature and pressure gradient may also substantially increase winter wind velocities. On South Baranof portions of the area receive some of the highest rainfall in southeastern

Alaska. A weather station located at Little Port Walter on the east coast of Baranof Island immediately south of the Wilderness has recorded yearly precipitation of well over 200 inches per year, mostly in the form of rain.

Air

Air quality in Southeast Alaska is generally very good. The region contains no designated non-attainment areas for air quality. There are relatively few major emissions sources in the region, and pollutants are rapidly dispersed by winds and removed by precipitation. Air quality in the state is regulated by the Alaska Department of Environmental Conservation.

Fire

The incidence of forest fire on Baranof or Chichagof/Yakobi Islands is extremely low, although evidence of old burns exists. Summer rainfall and the relative infrequency of summer electrical storms are major factors in reducing wildfire potential. Wildfires are generally man-caused and due to escaped campfires.

Minerals

Rocks within the Wilderness have been classified by the U.S. Geological Survey as Jurassic and Cretaceous sediments and volcanics. The sedimentary rocks consist of phyllites, quartzites, graywackes, limestones and chert, primarily from the Sitka Graywacke formation. The volcanics are intrusive igneous tonalites and granodiorites containing an abundance of hornblende and tiotite. The rocks on the north side of the entrance to Red Bluff Bay, however, are composed of serpentinites and serpentitized periodotites.

Only one major fault has been identified within the Wilderness. This runs through Patterson Bay north across Gut Bay, to the head of Hoggatt Bay, and upstream from the head of Red Bluff Bay.

The area contained within the South Baranof Wilderness boundary does not have an active mining history. There has not been any production of minerals and past investigations indicate only minor quantities of base metals are present. Oil and gas deposits have not been located, nor are they expected because of the unfavorable mineral terrane. Geothermal resources are present in the Gut Bay area, but they have not been explored in depth. Sand and gravel deposits are plentiful in most drainages at the mouths of the streams.

The lands within South Baranof Wilderness have a low potential for locatable minerals based on the following factors:

1. Non-favorable geologic environment.
2. Lack of evidence of past or present mining activity, close to an area (Sitka) where activity has previously occurred.
3. Low background values of base and precious metals from previous investigations in the area.
4. Lack of mineral showing.

The South Baranof Wilderness contains no current mining claims.

Water Quality

The tremendous volume of water that falls as precipitation across Southeast Alaska is difficult for most people to comprehend; one inch of rainfall distributed over one square mile amounts to 17.4 million gallons of water. Southeast Alaska receives an average of about 100 inches of precipitation annually. About 35 percent of this falls as snow.

In spite of the abundant amount of precipitation in this region, groundwater is generally scarce. Extensive areas of shallow or poorly drained soils and the presence of bedrock close to the soil surface inhibit deep aquifer formation. The majority of the precipitation is rapidly returned to the ocean via the large number of streams present throughout the area.

Streamflows vary greatly, even over short periods of time. Daily flows in all streams are lowest from December through March. During the winter and early spring months, precipitation accumulates as snow in the high basins. When temperatures rise in the late spring, snowmelt causes runoff to increase rapidly. High rates of flow usually occur during July, August, and September. By mid-November flows begin to recede to prevailing winter lows.

Soils

In Southeast Alaska high precipitation and cool temperatures slow decomposition of organic matter and result in soils covered by a thick, constantly moist, organic duff layer, high in nutrient content. Below this organic layer, soil fertility is commonly low.

Organic soils in Southeast Alaska include alpine organic soils, well-drained organic soils derived from forest litter over bedrock or gravel, and wet organic soils derived from various vegetative materials. The wet organic soils below the alpine can generally be placed into four groups: (1) poorly decomposed moss peat (Kogish Series); (2) moderately decomposed sedge peats (Kina Series); (3) poorly decomposed sedge peats (Staney Series); and (4) mucks over peats (Maybeso and Kaikli Series).

Of these four major kinds of wet organic soils, only those of the last group (Maybeso and Kaikli soils) support forest vegetation; they represent about 10 percent of the landscape. The others are muskeg, that is, the vegetation on them is dominated by sphagnum mosses or sedges or both, with low shrubs and forbs and only scattered trees. They represent about 14 percent of Southeast Alaska's landscape.

The wet organic soils throughout Southeast Alaska comprise about 24 percent of the landscape. Estimates derived from timber inventory of Southeast Alaska brushfields, rock, snow, and icefields. The remaining 39.8 percent is comprised of soils derived from glacial till and residual bedrock. This includes soil types which support conifers, alder brush, and natural grassland.

The organic mat which accumulates on the surface of these glacial tills and residual soils is a storehouse of plant nutrients. The depth of tree rooting is confined primarily to this organic mat and the upper 12 inches of soil.

Land Status

At the present time all lands located within South Baranof Wilderness are administrated by the Sitka Ranger District, Chatham Area. There are several actions, pending or potential, which could establish inholdings of other ownership or administration within the Wilderness. These actions are as follows:

Native Allotments (1906 claims). Under terms of the Act of May 17, 1906 (34 Stat. 197) as amended August 2, 1956 (70 Stat. 954, 48 USC 357, 357a, 357b) Alaska Natives (Indians, Aleuts, Eskimo) of full or mixed blood may under certain conditions, claim land on the National Forest (up to 160 acres). At the present time there are no claims pending.

Native Historic Sites (14H1). Under provisions of the Alaska Native Claims Settlement Act (1971), Native Corporations were granted the right to select lands from the National Forest which are of significant cultural and/or historic value. There was one site under consideration in South Baranof Wilderness, located in Jamboree Bay. Selection of this site was made, but the site was denied.

Federal Power Withdrawals. Potential energy production sites have been identified on all Federal lands in anticipation of future energy needs. These areas have been withdrawn under a power site classification 264 within provisions of Sec. 24 of the Act of June 10, 1920 (41 Stat., 1063) and provisions of the Act of Congress on March 5, 1879 (20 Stat., 394).

There are two power withdrawals within South Baranof Wilderness. They are located at:

1. Maksoutof Lake and Rezanof Lake
2. Plotnikof Lake

To date no action has been taken to develop the power sites. The Alaska Power Administration (U.S. Dept. of Energy) does not include any of these two locations in current power development plans. Maksoutof (and Rezanof) Lake is an alternative site for Takatz Lake, should the development of a hydro-electric power at Takatz Lake, 17 miles northeast of Sitka, not be sufficient or available for future needs of Sitka. Maksoutof has a potential of 117 million annual kilowatt hours, however, the transmission distance (to Sitka) makes the cost of development prohibitive at this time. Plotnikof Lake has considerably less potential than Maksoutof and it is not likely that it will be developed in the foreseeable future.

There are presently five Special Use permits that involve facilities and are land-based.

Table XX

SPECIAL USE PERMITS FOR FACILITIES IN THE SOUTH BARANOF WILDERNESS

LOCATION	USE	HOLDER
Patterson Bay	Research Studies	NSRAA
Scow Bay	Subsistence Camp	Private
Sandy Bay	Hatchery	Tlingit Haida Fisheries Development
Whale Bay	Outfitter Guide	Private
Whale Bay	Mooring Point	Sitka Sound Seafoods

An Administrative Free Use Permit was issued in 1989 to allow beach log salvage on the east coastline of the wilderness.

BIOLOGICAL ENVIRONMENT

Fisheries

Coho, sockeye, pink, and chum salmon, cutthroat, steelhead and rainbow trout, and Dolly Varden char occur in some of the lakes and streams. The most notable shellfish and marine fish species are dungeness and tanner crab, shrimp, herring, and halibut.

Sport, commercial, and estuarine fishery values are rated high considering the number of species, abundance, habitat condition, sport and commercial fisheries, and several other special values which are associated with certain watersheds.

Most use of the fishery resource is commercial although some of the lakes support a good trout and char sport fishery and are popular with local residents.

Fishery enhancement methods identified as potentially applicable for South Baranof Wilderness include, but may not be limited to, the following:

1. Stream clearance and improvement.
2. Fishpasses.
3. Spawning channels.
4. Lake and stream fertilization.
5. Lake and stream stocking (eggs and fry).
6. Instream and streamside incubators.
7. Hatcheries.

Several of the enhancement methods such as fishpasses, spawning channels and hatcheries may not be allowed pending completion of ANILCA 507(a) Cooperative Fisheries planning. Final determination for approved projects will be made at that time.

Northern Southeast Regional Aquaculture Assoc. (NSRAA), ADF&G, private non-profit corporations, Native groups, and the Forest Service have identified a number of specific sites where these techniques might be applied in South Baranof Wilderness. The State of Alaska has proposed State selection of lands near Shamrock Bay for the purposes of locating a fish hatchery at Lake Ekaterina. The selection was denied and no proposals for a hatchery are pressing. In addition to these enhancement opportunities on-going surveys are identifying more locations where development potential may be feasible. As the state-of-the-art of fishery enhancement develops, as surveys identify potential enhancement locations, and as research identifies means to improve cost/benefit ratios and increase feasibility of heretofore unfeasible projects, the number of potential enhancement projects may increase. Some presently identified projects may be shown to be unfeasible as well.

Cooperative fisheries planning as specified in ANILCA Section 507(a) will be the basis for determining enhancement activities needed within the Wilderness. Aquaculture projects will only be authorized if Section 507(a) planning shows they are needed to meet the goal of restoring and maintaining fish production to optimum sustained yield levels.

Coho lake rearing and stocking is an on-going project implemented during the 1982 field season which continued through 1989 on Banner Lake within the Wilderness. An Environmental Assessment for this project was completed. Continuation of the project will be addressed by the ANILCA 507(a) planning process and may be discontinued if 507(a) planning does not show a need for its continuation.

The Forest Service maintains a camp, weir, and fishpass at the outlet of Falls Lake from June through August. Escapment, fishpass utilization, mortality, and low flow data are collected.

Wildlife

Brown bear, Sitka black-tailed deer, mountain goat, furbearers, land and shore birds, and bald eagles inhabit the Area. Many species of waterfowl migrate along

the coastline of the unit with a few species nesting in the estuarine and streamcourse wetland areas. Major marine mammal and sea bird concentration areas occur on rocks and small islands on the west side of the Wilderness Area.

No species of plants or animals which are presently listed by the Federal government or the State of Alaska as threatened or endangered are known to be found within the Wilderness.

Vegetation

Most forest stands are overmature and are composed primarily of western hemlock and Sitka spruce. Alaska cedar is occasionally found scattered throughout the spruce-hemlock stands and lodgepole pine can be found on or near muskegs.

The forest understory is composed of a mosaic of shrub and forb associations ranging from dense vaccinium/rusty menziesia under open-canopied stands to park-like sphagnum carpets under closed-canopied stands. Devil's club, salmonberry, and alder characterize disturbed sites while muskeg areas are dominated by sedge, rushes, and ericaceous shrubs. Low, mat-forming vegetation adapted to snowpack and wind-abrasion dominates alpine areas. Grass-sedge meadows are located along the beach and in estuarine areas.

SOCIAL ENVIRONMENT

Wilderness

The distance of South Baranof Wilderness from population centers and its relative inaccessibility have allowed the area to retain its high wilderness values. The area supports a full range of life zones, from the estuarine to the alpine, which may be observed by the visitor as a diverse system of beach grasses, shrubs, muskeg, forest, meadow, and alpine tundra blended by transitional zones and interspersed with streams and lakes. An abundant old-growth rain forest of Sitka spruce and western hemlock covers much of the lower elevations.

Unique to Baranof Island (specifically the South Baranof Wilderness), among the hundreds of islands which make up the Alexander Archipelago, are its active glaciers. The glaciers are one of the most distinctive climate related features of southeast Alaska.

Associated with South Baranof's alpine glaciers are narrow sharp ridges between U-shaped glacial valleys and scenic fiords.

It is this combination of rugged mountains, glaciers, dense rain forests, and the sea that gives South Baranof Wilderness its exciting landscape variety and high wilderness value.

Most areas of the Wilderness are characterized by an essentially unmodified natural condition. Persons using the Area can expect a high probability of experiencing isolation from the sights and sounds of humans, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers a high degree of challenge and risk.

Developments in the Area are isolated to only a few locations. They include five Forest Service recreation cabins within the entire 319,568 acres. The absence of roads and the dependence on aircraft or boats for access enhances the feeling of isolation and solitude.

Recreation

Commonly occurring recreational activities include freshwater lake fishing, big game hunting, camping, hiking, and boating. Use of Forest Service recreational cabins is closely tied to these recreational pursuits.

Public Facilities: There are presently five Forest Service recreation cabins located in South Baranof Wilderness. They are listed below by type of construction and locations.

Table XX

RECREATION VISITOR DAYS FOR PUBLIC RECREATION CABINS

Prefabricated pre-cut log cabin.	1988	1987	1986	1985	1984
Plotnikof Lake	314	36	174	100	278
A-Frame.					
Avoss Lake	151	162	140	260	217
Davidof Lake	46	18	0	40	0
Plywood.					
Gar Lake (Maksoutof Lake) emergency shelter.					
Rezanof Lake (old)					

The plywood cabins located at Gar Lake and Rezanof Lake are old and in a state of disrepair. They are considered only as emergency shelters and are no longer maintained or included in recreation analysis.

Trails: There are two developed trails in South Baranof Wilderness. They are the Davidof Lake trail and the Port Banks trail.

The Davidof Lake trail (Trail # 463) runs for one mile between Plotnikof Lake and Davidof Lake. The last maintenance work done on the trail was a Level I project in 1981. At that time, the trail was clear and passable. In 1989, the trail was hard to locate, brushy, and blocked with blowdown.

The Port Banks trail (Trail # 580) is an historic CCC trail which runs for six miles and connects the head of Port Banks with the old Rezanof cabin. In 1989, 1.5 miles starting at Port Banks was surveyed. The first mile was brushed up to a scenic vista. A huge slide interrupts the trail at the 1.5 mile mark and prevented further work on the trail. There has been no decision to re-establish the destroyed portion or continue maintenance past the 1.5 mile mark.

There is no data as to the number of people using either trail. It can be assumed, however, that use of the Davidof Lake trail is closely related to use of the Plotnikof Lake cabin.

Outfitter/Guides: There is only one recreation oriented outfitter/guide currently under permit to operate in the South Baranof Wilderness. Southeast Management and Trading Company takes clients on nature observation trips to Deep Inlet, Patterson Bay, Red Bluff, and Gut Bay.

There is one commercial visitor service that was operating on South Baranof prior to the signing of ANILCA in 1980. Southeast Management and Trading Company (SEMCO) operated around Gut Bay and Red Bluff Bay doing nature observations.

Dispersed Use: South Baranof Wilderness receives moderate deer and goat hunting pressure by Sitka, Kake, and Angoon residents as well as commercial fishermen who often seek refuge from storms and inclement weather conditions in the many sheltered bays and coves along the coasts. Beachcombing, photography, and fishing are also popular activities. The west coast of the Area is characterized

by numerous and large offshore islands and inland piercing fiords. Sheltered waterways provide small boat access from Sitka as far south as Necker Bay; from this point southward boat travel requires negotiating exposed outside waters.

Recreation Opportunity Spectrum: Inventoried ROS classifications for South Baranof Wilderness (see Figure 2) fall into four categories including Primitive I (241,500 acres 76%), Primitive II (57,500 acres, 18%), Semi-primitive non-motorized (7,300 acres, 2%) Semi-primitive/motorized (9,100 acres, 3%, and Rural (200 acres, .>1%).

Access: Access to South Baranof Wilderness is either by boat or airplane. There are no upland trails or roads to or near the Wilderness. The closest road, at Green Lake hydroelectric dam, 12 miles south of Sitka, is approximately 6-1/4 miles from the northern border of the Wilderness. South Baranof's relative isolation is a part of its wilderness value.

Airplanes land on many freshwater lakes (at all Forest Service recreation cabin locations), and on protected saltwater coves and bays. Many inland lakes provide good access for floatplanes. Users are cautioned to check with local flyers or air charter services in Sitka or other nearby communities before flying to South Baranof Wilderness. Inclement weather, poor visibility, and cross winds can severely restrict flying as well as landings and take-offs.

Pre-ANILCA Helicopter Use: For pre-ANILCA helicopter use to be considered it must be: prior to 1980, on a "more or less regular basis," and not for administrative purposes (ADF&G, USGS, USFS, etc.). This use is in the process of being verified.

Arnie Johnson Helicopters has reported the following use:

Table XX

REPORTED PRE-ANILCA HELICOPTER USE BY ARNIE JOHNSON HELICOPTERS

LOCATION	USE
Plotnikoff Lake (middle of lake-narrows)	visit cabin, hunting and fishing
Benzeman Lake (north end)	hunting and fishing
Lake Diana (north end)	hunting and fishing
Red Bluff Bay (east end)	hunting and fishing
Sandy Bay (south shore)	hunting and fishing
Yamani Islets (all)	beachcombing and hiking
Jamboree Bay (south end of bay)	beachcombing and hiking
Whale Bay (end of small arm)	beachcombing and hiking
Davidof Lake	visit cabin
Rezanof Lake	visit cabin
Maksoutof Lake	visit cabin
Avoss Lake	visit cabin

Some private mineral exploration was conducted at Snipe Head prior to the passage of ANILCA.

TEMSCO Helicopters has identified Red Bluff Bay, Whale Bay and Gut Bay as moderate use (1-5 trips/year) areas.

Recreation Use: Due to Baranof Islands large size and remoteness, accurate visitor use of the entire wilderness is difficult to ascertain and should be viewed as a "best guess." The numbers in the table below are expressed in Recreational Visitor Days (RVD) with one visitor day representing one visitor recreating for 12 hours.

1988	82,170 RVDs
1987	65,500 RVDs
1986	80,411 RVDs
1985	82,500 RVDs
1984	82,500 RVDs

Cultural

A total of eight known historical sites occur within the subject area. For reasons of site security, their exact location and description are exempt from disclosure under the Freedom of Information Act. Records of each site are on file in the Chatham Area archeologist's office.

Visual

The visual character type of this wilderness is Baranof Highland. Terrain in this unit consists of an irregular, rugged asymmetrical chain of landforms 3,000-5,300 feet in elevation having a steep eastern slope and a more gentle western slope deeply indented with fiords. Generally, landforms are visually massive, bulky and stark throughout the character type. Shoreline forms are very rugged with steep-sided fiord country on both east and west coasts. A chain of extremely irregular and exposed island forms is found in the northwest corner of the character type.

Rugged headwalls, cliffs and escarpments are common on the west side (exposed to the sea wind and waves). Rock faces are sometimes visible on many steep-sided fiords near saltwater throughout the unit. Numerous rocky crests, sharp ridges, horns, aretes and criques are found at higher elevations. Snow can be seen all year round on higher summits with cirque glaciers and small permanent icefields, especially in the northern half.

Streams are generally short and flow directly to saltwater. Cascades are common on east Baranof. Lakes are plentiful throughout the character type, but especially in the south half. Several are three to four miles long. Many of them are found at elevations under 500 feet. The west and south coastline exhibits potential for very dynamic surf waterforms.

Conifer cover density varies widely even on low slopes near saltwater and is usually interspersed with muskeg and other lower forms of vegetation affording the viewer considerable variety. Larger intertidal grass and associated meadows species are infrequent. Effects of wind and salt spray affect the character and, to some extent, the species on the west side of this unit.

Essentially all of this wilderness (100%) is in Existing Visual Condition (EVC) 1; these areas appear to be untouched by human activity.

Subsistence

The role that subsistence plays in the lifestyles of residents of the communities surrounding South Baranof Wilderness varies from a minor role (Sitka) to significant roles (Kake and Angoon). While the majority of these subsistence activities are concentrated away from South Baranof Wilderness, this area does provide some subsistence opportunities. The east side of South Baranof Wilderness receives more subsistence use than the west side. The people of Kake have traditional ties to this area and continue to depend on resources within the

Wilderness Area for a part of their livelihood. Sockeye salmon harvested from the Falls Lake system and Gut Bay are reported by Kake fishermen to be sources of subsistence sockeye salmon for the residents of Kake. The residents of Angoon once regarded the east side of Baranof Island as a good place to hunt seals, but in recent years seal hunting has not been as intensively pursued. Angoon residents also take subsistence fish incidental to their commercial fishing efforts.

Subsistence hunting and trapping occurs seasonally along the east side of South Baranof Wilderness. These activities are not very intensive due to the presence of game animals and furbearers much closer to the population centers of Kake and Port Alexander. Some Petersburg residents have hunted within the Wilderness in recent years due to low deer populations in areas adjacent to Petersburg.

The west side of the Wilderness is used by residents of Sitka and Port Alexander. Fishermen from Port Alexander take subsistence sockeye salmon when commercial fishing in the area but otherwise confine their subsistence activities to the vicinity of Port Alexander. Residents of Sitka use the west side for taking sockeye salmon from the Politoofski and Benzeman Lake systems, deer hunting throughout west Baranof Island and occasional abalone picking and clam digging. These activities are not intensively pursued and are often combined with other recreational or commercial endeavors.

Scientific Values

Agencies such as Alaska Department of Fish and Game, Forest Service, USGS, as well as universities, perform research on the flora, fauna, and geology of the island. Because of its relatively pristine condition South Baranof acts as a "control" in comparison to other, more developed areas.

(INSERT MAP OF SOUTH BARANOF WILDERNESS HERE)

SOUTH PRINCE-OF-WALES
WILDERNESS

ADMINISTRATIVE FACTORS

Location

The South Prince of Wales Wilderness occupies 91,018 acres on the southern tip of Prince of Wales Island, approximately 40 miles southwest of Ketchikan, Alaska. It lies to the east of Cordova Bay in the Dixon Entrance. The area is designated within the Tongass Land Management Plan (TLMP) as management Area K-27 and is composed of the following VCU's: 687, 690, 696, 697, 698, 705, 706, and 707.

The South Prince of Wales Wilderness is located entirely on the Craig Ranger District of the Ketchikan Area, Tongass National Forest. A legal description of the wilderness area is on file at the Craig Ranger District.

Administrative
Facilities

There are no administrative facilities in this Wilderness. It is administered from the Craig Ranger District office in Craig, Alaska.

PHYSICAL ENVIRONMENT

Geography

This wilderness is characterized by a complex network of bays, inlets, and a large cluster of islands known as the Barrier Islands. The terrain within this Wilderness is varied. The southeastern part has low, undulating topography broken by numerous streams, lakes, bays, and wetlands. By contrast, Klaskan Inlet, a 12-mile long arm of Cordova Bay, is 1/2 to 3/4 miles wide, with the surrounding landforms rising abruptly from sea level to over 2,500 feet.

The Barrier Islands, in Cordova Bay near the southwest end of the wilderness, are composed of about 75 small islands and innumerable smaller rocks. These islands range in size from a few acres to over 500 acres. They are exposed to fierce ocean storms. The trees on the islands are often stunted and deformed by the wind.

Climate

Maritime weather dominates this Wilderness as it does most of Southeast Alaska. Normal temperatures range from the 40's to mid-60's F. in summer, and from the high teens to low 40's F. in winter.

Storms and moderate to heavy precipitation occur throughout the year, although storms are most frequent and precipitation is heaviest from September through November. In winter, because of the island's location on the outer coast, snowfall accumulations are usually not very heavy.

Surface winds are moderate to strong throughout Southeast Alaska. Prevailing winds generally blow from the south or southeast, except where local topography influences wind direction.

Air

Air quality in this area is very good. There are no sources of pollution anywhere near this Wilderness.

Fire

The incidence of forest fires in the South Prince-of-Wales Wilderness is extremely low. Summer rainfall and the relative infrequency of summer electrical

storms are major factors in the low wildfire potential. Wildfires are generally man-caused and due to escaped campfires.

Minerals

The wilderness area is within the Prince of Wales mountain physiographic province. Pleistocene glaciation was the major influence on the topography of the area. Bedrock in the area consists of Ordovician, Silurian, Devonian, and Jurassic age rocks. Rock types present in the area include limestone, greenstone, graywacke, mudstone, siltstone, tuff, lava, granite, quartz diorite, and volcanogenic deposits.

There are several known mineral occurrences adjacent to the wilderness area. A forty-foot adit was driven on the Good Hope prospect southwest of Bokan Mountain. Principal minerals were copper and iron. The Bokan Mountain area adjacent, but not within the wilderness boundaries, is the most active area. Approximately 94,000 short tons of uranium ore was produced from these claims.

The Wilderness area was open to mineral entry through December 31, 1983. Operators had the right to locate and prospect mining claims within the wilderness area until that date. On January 1, 1984, the wilderness was closed to mineral entry subject to valid existing rights. All or parts of 18 mining claims are found in the wilderness. These are located in a parcel which extends into the wilderness along its southeast boundary, in the area east of Biscuit Lagoon. Currently, the potential for eventual development of these claims is unknown.

Water Quality

The water quality in the streams in this Wilderness are expected to be good. No development activity has taken place in this area in the recent past that would affect water quality.

Soils

(No report on specific soils of the South Prince-of-Wales Wilderness is available)

Lands

All lands located within the South Prince of Wales Wilderness Area are administered by the Craig Ranger District, Ketchikan Area, Tongass National Forest. There is one inholding of 13.75 acres in Hunter Bay.

Under terms of the Alaska Native Claims Settlement Act 14 (H) (1), native corporations were given the right to select lands from National Forests that are of significant cultural and/or historic value. There is a pending 14 (H) (1) site Dix-003 (Klinkwan) near the head of Keete Inlet. The Bureau of Land Management, Bureau of Indian Affairs, and the Forest Service have agreed on Klinkwan's historical significance.

There are two native allotments located within the wilderness area: AA-7545 filed by Thomas L. Morrison and AA-7917 filed by Woodrow W. Morrison. The final disposition of the native allotments is currently under litigation.

A special permit was issued March 1, 1966, and reissued December 17, 1972, to the ADF&G for the construction, operation, and maintenance of a fish research station. Current improvements include a 12' X 10' plywood cabin, counting weir, and an outhouse. This permit is due to expire on December 31, 1992. There are no other encumbrances except for the mining claims described under the minerals section.

There were no documented or known temporary camps for taking fish and wildlife existing before 1980.

BIOLOGICAL ENVIRONMENT

Fisheries

The fish species found within the South Prince of Wales Wilderness are typical of the rest of Prince of Wales Island. Principal species are salmonid and include cutthroat and rainbow trout, Dolly Varden char, and five species of salmon. Other fish found within the area are stickleback species and sculpin species. The Hunter Creek system is a significant producer of sockeye salmon. Population estimates are available in the ADF&G stream catalogs.

Wildlife

Terrestrial wildlife species found in the South Prince of Wales Wilderness are typical of those found elsewhere on Prince of Wales Island. Sitka Black-tailed deer, wolves, black bears, marten, mink, otter, and beaver inhabit the area. Bald eagles nest along the shoreline and on offshore islands. The Barrier Islands are a particularly important wildlife area, providing habitat for transplanted sea otters and other marine mammals, and breeding sites for gulls. Almost no data is available concerning wildlife population levels in the wilderness. Populations are presently controlled by natural factors, as hunting and trapping pressure is light.

Vegetation

The vegetation of the islands is typical of the outer coastal islands in the Alexander Archipelago: Sitka spruce, western hemlock, western redcedar and Alaska yellow-cedar with their associate understory species.

There are no known threatened or endangered vegetation species nor are any expected to be found (Helmuth and Fischer, 1983).

SOCIAL ENVIRONMENT

Wilderness

The combination of rugged mountains, dense rain forest, turbulent sea, and isolation from population centers has allowed the area to retain its high levels of wilderness values.

The majority of the wilderness is characterized by unmodified natural conditions. Recreation users of the area can expect to experiencing a high degree of solitude and isolation from the impact of human development.

Current improvements in the area are very limited. A cabin and weir at Klakas Lake under special use permit to the Alaska Department of Fish and Game (ADF&G) and an abandoned cabin on Klakas Inlet are the only known structures. There are no maintained trails. The only existing trail is an unimproved trail between Klakas Inlet and Klakas Lake. The imprint of man is essentially unnoticeable over the wilderness, allowing it to maintain its original natural character.

The Cordova Bay area adjacent to the wilderness is an important area for the troll fishing fleet. The harbors within the wilderness are heavily used by this fleet for protection from storms. Therefore fishing vessels are a common sight in the waters along the edge of the Wilderness.

Recreation

Public Facilities

There are no existing developed recreation facilities in the area.

Trails

There are no developed trails in the area

Commercial

There are no known commercial services being offered at this time to this area. There were no documented or known visitor services existing before 1980.

Dispersed Use

Recreational use of the wilderness area is very limited due to its isolated location. Most use is generated by commercial fishing boats during the open seasons. Protected bays such as Klakas Inlet, Hunter Bay, and Tah Bay are occasionally used by hunters, trappers, and other recreation users. These bays are approximately 30 miles by water from Hydaburg and 65 miles from Craig.

Recreation Opportunity Spectrum

The breakdown of the South Prince of Wales Wilderness into ROS classes is based primarily on two criteria, that dealing with physical characteristics such as distance and remoteness, and social criteria that deals with expected encounters with other parties or individuals. Applying the physical criteria, primarily remoteness, the Primitive II areas are those roughly a half mile from the shores of such waters as Klakas Inlet, Hunter Bay, Tah Bay, and Cordova Bay. These bays are allocated more than 15 miles from any community. Based strictly on this distance criteria, they are considered "less accessible" waterways. However, they are relatively protected waters and, in most weather conditions are reachable by most of the the larger boats from the Hydaburg area. Because social encounters is expected to be only periodic, this Primitive II rating still applies.

The other shoreline areas of the wilderness along the south end generally face the exposed open waters of the Dixon Entrance. Most of these areas are classified as Primitive I. They are generally unsafe waters for crafts other than large fishing boats and hence primarily inaccessible to the general public. The exceptions to this are Minnie Bay and Brownson Bay which get a periodic concentration of fishing boats anchoring in these locations. Hence these areas are rated Primitive II.

The interior of the wilderness, due to the remoteness from the existing road system and lack of any evidence of humans, is classified as Primitive I.

ROS CLASS	ACRES	PERCENT
Primitive I	50,500	58
Primitive II	37,100	42

The GIS recreation data base displays in more detail the Recreation Opportunity Spectrum classes and the known key recreation areas and sites in the Wilderness.

Access

Principle access to the area is via Cordova Bay from communities on the west side of Prince-of-Wales Is. Access is generally by boat. However in the last few years some increase in kayak use has occurred. Several large lakes or lagoons permit aircraft access into the interior of the Wilderness. There are no documented pre-ANILCA helicopter landing sites within the Wilderness.

Recreation Use

Recreation use over the last five years is estimated to have averaged no more than 500 recreation visitor days per year.

Cultural Resources

Although information regarding population dynamics and aboriginal land use within the South Prince of Wales Wilderness Area is vague, it is clear that at least two separate aboriginal groups had utilized the region over time, these being the Tlingit, who were expelled from their homeland in the mid-eighteenth century by the Tlingit Tekwedí Clan. This particular branch of the Tekwedí prospered, especially after they incorporated with the Ganaxadi and become known as the Tantakwan, or Tongass people. The Tekwedí were the Haida's primary foes during the battles fought over who would claim South Prince of Wales.

The Haida were victorious in wresting South Prince of Wales away from the Tlingit, and henceforth, this area was recognized as being the homeland of the Alaska Haida (also referred to as the "Kaigani"). It was not until the late 1800's that the Alaska Haida, who populated South Prince of Wales, began to undergo considerable culture change. This was attributable to the purchase of Alaska by the United States, and the associated expansion into southern southeast Alaska by various special interest groups; the first being missionaries, and the second being entrepreneurs involved in the newly created salmon industry.

Missionaries arrived at the Haida winter village, Klinkwan, in the late 1800's, and subsequently made inroads to the extent that citizens were baptized and a church and western style houses were built. The missionary effort to incorporate the Haida into the mainstream culminated when all of the people were urged to consolidate in the new town of Hydaburg in 1911, where all of the children could be sent to one school.

In addition to the aforementioned cultural resources, there are 17 additional known and reported sites which range from forts to villages, and include petroglyphs, fish weirs, portages, and cemeteries. Thus, there is a high frequency of cultural resources in the wilderness area. This region has been one of great significance to different groups of people through time.

During the peak of salmon industry, at least four separate salteries or canneries were established in what is now the South Prince of Wales Wilderness Area.

Visual Resource

No formal visual resource inventory of this area has been conducted, though some extensive informal field surveys have been done in some of the coastal areas of the Wilderness.

This area is all part of the Coastal Hills character type which is by moderately steep landforms, predominantly rounded summits, elevations ranging up to 3000 to 4500 feet, and flat-floored, U-shaped valleys. A variety of island groups are also common.

The northern half of this area is fairly characteristic of the character type, though the steep slopes along Klakas Inlet rise to less than 2000 feet. The southern end of the area is characterized by fairly flat to low rolling terrain. However this terrain is broken up by an intricate network of streams, lakes and lagoons that add scenic interest to the area. At the southwestern corner of this area are the Barrier Islands, a diverse cluster of islands, islets and rocks of different sizes that are the outstanding scenic features of the Wilderness. This portion would be inventoried as a Variety Class A landscape (having a level of landscape diversity that is unique for the character type in which it is located.) Most of the rest of the area would be inventoried a Variety Class B (possessing a degree of landscape diversity that is common in the character type.)

Because this area is a classified Wilderness, the inventoried visual quality objective for the entire area is Preservation. This allows for only small scale, low visual impact recreation facilities.

Subsistence

The community of Hydaburg is the only town or village which makes any appreciable use of the wilderness for subsistence purposes. The wilderness is located 22 miles from Hydaburg at its closest point. The primary subsistence uses are for marine resources such as herring eggs, bottomfish, shrimp, abalone, crabs, clams, sea urchins, and seaweed. Some use of the area is also made for hunting, trapping, and the collection of gull eggs. Areas of primary use include Hunter Bay and the Barrier Islands. Reliable data on numbers of deer, furbearers, and fish taken for subsistence purposes from within the wilderness are unavailable.

The town of Hydaburg has expressed concern over the increasing presence of commercial and sport fishermen resulting in a decrease of fish and shellfish for subsistence purposes. If overharvesting of these resources depletes their supply in areas closer to Hydaburg, the wilderness would assume increasing importance in providing these resources.

The Alaska Department of Fish and Game is currently studying subsistence use patterns in Southeast Alaska. This information will provide a data base which will help to clarify the subsistence situation within the wilderness area. No allocations of the subsistence resources have been made by the State in this area.

Scientific Values

Because much of this area was the original home for much of the Haida peoples, further extensive cultural resource surveys and site testing would likely be of much scientific value. Also of scientific interest would be research in the coastal geomorphology of this area, particularly as it relates to the possible location of prehistoric cultural sites in the area.

(INSERT MAP OF SOUTH POW WILDERNESS HERE)

STIKINE-LECONTE WILDERNESS

ADMINISTRATIVE FACTORS

Location

The Stikine-LeConte Wilderness is located on the Wrangell Ranger District of the Stikine Area of the Tongass National Forest, east of Petersburg and north of Wrangell, Alaska on the mainland of North America. This 449,951 acre Wilderness includes the Stikine River watershed and the LeConte Bay watershed and icefields, from the Canadian boundary to the sea. Within the Wilderness are 1,025 acres of private or alienated lands making a net Wilderness acreage of 448,926 acres. A legal description of this area is on file at Forest Service offices in Wrangell, Petersburg, and Juneau.

The Stikine River provides access to British Columbia, Canada, through the coast range mountains for shallow draft boats and barges. The river has provided access for many uses throughout its history and still does, but the primary use in Alaska is for recreation oriented activities. LeConte Bay was originally an important source for ice used in the fishing industry. Currently, the use of LeConte Bay is for recreation oriented activities and commercial fishing.

Administrative Facilities

The Forest Service does not maintain any administrative facilities in the Wilderness. The Wilderness is administered by the Wrangell Ranger District in Wrangell. The United States Geodetic Survey maintains one cabin below Shakes Slough, on the main river, to assist in their river gauging operations. The Alaska Department of Fish and Game has 4 cabins under permit. Two cabins are involved in administration of hunting programs, and are used regularly. Two cabins were used for research and are currently inactive, but still under permit. The two administrative cabins are located on the main river at Kakwan Point and Gut Island. The two research cabins are located on the main river, one above the upper end of Andrew Slough, and the other just below Shakes Slough. They are the property of the United States.

PHYSICAL ENVIRONMENT Geography

The northern part of the Wilderness is mostly permanent glacial icefields averaging 4,000 feet in elevation, which lead to LeConte, Shakes, and Popof Glaciers. LeConte Glacier is the southernmost tidewater glacier in North America and actively calves icebergs into LeConte Bay. Shakes Glacier calves icebergs in Shakes Lake which then empties into the Stikine River via Shakes Slough. The remainder of the Wilderness north of the Stikine River is steep glacial-worn rock above treeline, with some peaks reaching 10,000 feet. From about 2,000 feet elevation down to salt water, the area consists of steep slopes and deep valleys covered with dense stands of spruce and hemlock forest. The glaciers produce many stream sources throughout this northern portion; Jap Creek, Bussey Creek, and Moonshine Creek being the most notable.

The Wilderness Area south of the Stikine River contains mostly steep, sparsely-vegetated mountains, averaging 3,000 feet elevation, with many hanging glaciers toward the eastern boundary. Toward salt water, the mountains and valleys are more moderate averaging 2,000 in elevation and are covered with spruce and hemlock forests. Goat Lake is the lake most useful to recreation in this southern portion, but many small lakes occur at high elevation and produce many small active streams. Two larger stream systems, Andrews Creek and Kikahe

River, are also located in this southern portion. The 2-1/2 miles of Andrews Creek is navigable.

Climate

Precipitation in the higher elevations falls as snow producing the previously mentioned icefields and glaciers. The remaining areas receive the typical wet weather of southeast Alaska, averaging 90 inches of rain annually. The presence of the glaciers and icefields has an effect on local weather in the form of winds, temperature, and the amount and kind of precipitation. For instance weather in the Stikine River valley can be milder than the outer coastal areas due to warm interior air flowing through this gap in the mountain range. The opposite can also be true, due to the extensive ice and snowfields.

Air

Air quality in Southeast Alaska and throughout this Wilderness is generally very good. There are few major emissions sources in the region, and pollutants are rapidly dispersed by winds and removed by precipitation. At times easterly winds down the Stikine River valley transport fine particles from the exposed river bars, and deposit them around the mouth, giving the air a hazy appearance.

Fire

The incidence of fires is extremely low. Summer rainfall and the relative infrequency of summer electrical storms are major factors in reducing wildfire potential. Wildfires are generally small and human caused, and due to escaped campfires.

Minerals

In the past, the Stikine River was one of the gateways for several gold strikes in British Columbia. The Wilderness itself, has not had an active mining history. Active claims exist in LeConte Bay, however the validity of these claims is being determined. Other small mining operations have occurred but none are currently active. No major production of minerals has occurred. Geothermal resources are present in the form of hot springs but have not been utilized for an energy source.

Water Quality

The Stikine River itself proceeds from one basic channel at the Canadian border to three braided channels 30 miles down river at the mouth. In between, navigable channels split off and rejoin the main channel many times forming an intricate system of rivers, sloughs, tributaries, islands, and tideflats. Large amounts of sediment are transported by the river, forming a huge alluvial delta at the rivers mouth. Water quality is high due to the absence of man made or introduced pollutants. The same can be said for all of the streams in the Wilderness. That is, longer streams generally transport glacial flour, giving them a cloudy appearance. Short streams near the outer coast may be unaffected by the influence of glaciers, but may be slightly dark due to the presence of tannins. The natural water quality overall for this Wilderness is high.

Soils

Alluvial deposits consisting of stratified gravels, sand, silt, and clay, occur along the floodplain of the rivers. Wind deposited soils (loess) dominate the uplands of the islands in the lower river from lower Limb to Sergief Islands. Also remnant sand dunes are still active in the areas on Andrews and upper Limb Islands known as the Desert. These dunes are a unique topographic feature on an otherwise flat alluvial valley bottom. Other surficial deposits adjacent to the river include both colluvium and glacial till. Soils in the mountains are generally thin to nonexistent. Rocks within the Wilderness have been classified by the United States Geological Survey as metamorphic on the western side, with the area to the east part of the Coast Range Batholith. The Coast Range Batholith consists of both Tertiary Granites (25 to 70 million years old) and

Cretaceous Granites (135 million years old). The metamorphic rocks consist of Phyllites with injections of Gneiss.

Lands

Status - Under the provisions of the Alaska Statehood Act, July 7, 1958, the State may select lands from the Federal Government for community expansion and recreational purposes. There was one State selection in the Stikine-LeConte Wilderness. This selection included approximately 242 acres within LeConte Bay at Bussey Creek. The State selection was disapproved by the Forest Service and has been dropped.

There are 1,025 acres of private land within the Wilderness. Most of this acreage is concentrated at the mouth of the river, on Farm Island (770 acres), and Sergief Island (249 acres). A small 5 acre tract exists on Camp Island, at the mouth of LeConte Bay.

Table--

LAND STATUS

TOTAL AREA 449,951 ACRES

Patented Land Inholdings

<u>Description</u>	<u>Acreage</u>
USS 1023	160.00
USS 2358	4.93
Pat'd Land	159.63
Pat'd Land	151.35
Pat'd Land	141.65
Pat'd Land	135.39
Pat'd Land	114.38
Pat'd Land	<u>157.76</u>

SUB TOTAL 1,025.09

Non-recreation SUP's - The Alaska Department of Fish and Game maintains four administrative cabins within the Wilderness under special use permit, one on the tideflats and three on the main river. These cabins are used for administration and scientific study of fish and wildlife resources. Upon completion of the studies, two of the cabins on the main river will be under Forest Service administration which may allow public use on site, public use at another site, or removal of the cabin. The ADF&G also maintains two sonar counting sites within the Wilderness in association with the cabin sites.

The United States Geological Survey maintains two stream gauges and one administrative cabin within the Wilderness under a Memorandum of Understanding. These uses are expected to continue.

Several commercial uses occur on the United States side of the border, related to recreation and commerce of this international waterway. The recreational charter boat and aircraft services benefit the visitor throughout the Wilderness, and the charter services benefit from the visitor use. Freight operations, snag clearing operations, aquaculture activities, and sand and gravel removal all occur on the river. These uses are generally well received by the public due to the direct benefits received or the limited duration of the activities.

In 1987 a propoeal was received to commercially extract glacial ice from LeConte Bay. The Forest Service was contacted by the State Department of Natural Resources for any concerns to the propoeal, as the operation was to take place in the navigable waters in the bay, and thus in the state's jurisdiction. The Forest Service concerns were of the incompatibility of the operation, and possible conflicts with the many visitors to the area. A permit was issued, with the condition the ice be removed from outside or outer end of the bay, during periods of low use. The operations lasted less than a year.

Twelve special use cabins currently exist within the Wilderness along the Stikine River. These cabins are used as base camps for dispersed recreation by permittees. The primary activities are moose and waterfowl hunting and general recreation. The cabins are in various states of repair. In addition, three applications have been received for special use permits under the provisions of Section 1303(b)(2) of ANILCA to cover trespass cabins that existed prior to the Act.

Temporary Facilities/Camps - Eight tent platforms exist under special use permit along river. These platforms allow temporary use by the permittees, primarily for moose hunting. When not in use, the temporary structures are supposed to be collapsed so as to be relatively unobervable.

Table XX

RECREATION SPECIAL USES

Location	Type	Holder
Sergief Island	Cabin	Club
North Arm Stikine River	Cabin	Private
Dry Is., King Slu	Cabin	Private
Gut Is.	Cabin	Private
Lower Shakes Slu	Cabin	Private
N. Limb Is., Elbow Slu	Cabin	Private
S. Limb Is., Eulachon Slu	Cabin	Private
Andrews Is., Andrewe Slu	Cabin	Private
Main River, east Kakwan Pt.	Cabin	Private
Clearwater Slu	Cabin	Private
Clearwater Slu	Cabin	Private
Clearwater Slu	Cabin	Private
S. Limb Is., Eulachon Slu	Tent Platform	Private
S. Limb Is.	Tent Platform	Private
Andrewe Creek (clearwater)	Tent Platform	Private
Upper Ketili River	Tent Platform	Private
Upper Ketili River	Tent Platform	Private
Main River, west Shakes Slu	Tent Platform	Private
Shakee Lake & Shakes Slu	Tent Platform	Private
N. Arm Stikine River, Coho Cr.	Tent Platform	Private
Lower Ketili Creek (pending)	Tent Platform	Private
Entire Stikine River	Outfitter Guide	Angling Adventures
Entire Stikine River	Outfitter Guide	TH Charter
River bottom, 3 camp sites	Outfitter Guide	Alaska Discovery
LeConte Bay	Outfitter Guide	Special Expeditions
LeConte Bay (pending)	Outfitter Guide	Outback Expeditions

NON-RECREATION SPECIAL USES

Location	Type	Holder
Main River, west Shakes Slu	Research Cabin	ADF&G*
Main River, east Andrews Slu	Research Cabin	ADF&G
Main River, Kakwan Point	Admin. Cabin	ADF&G
Gut Island	Admin. Cabin	ADF&G
Main River, west Shakes Slu	Gauging Cabin	USGS**
LeConte Bay, LeConte Glacier	Research site	Petersburg HS

*Alaska Department of Fish and Game

**United States Geological Survey

(Under permit as of December 1989)

Trespass - At this time there are twenty seven known occupancy trespasses within the Wilderness. Three of these applied for special use permits, under provisions of 1303 (b)(2) of ANILCA. An action plan to deal with this problem was formulated in the spring of 1989, and will be implemented. The following list is a summary of those cases in the Wilderness. Their status as to pre-ANILCA is also indicated.

Table XX

TRESPASS CASES

1. A cabin in a tree along Red Slough. pre-ANILCA
2. A cabin on a float with shoreties in Red Slough.
3. A cabin on Border Island. pre-ANILCA
4. A cabin on south shore of river between Mt. Flemer cabin and Guerin Slough.
5. A cabin in a tree along Guerin Slough. pre-ANILCA
6. A cabin along Guerin Slough. pre-ANILCA
7. A cabin at Barnes Lake.
8. A liveaboard type boat with shoreties in Kettili Slough.
9. A cabin along Kettili Creek.
10. An "A" frame type cabin along Kettili Creek.
11. A cabin on Wizard Island. pre-ANILCA
12. A cabin on Kettili Slough, .75 mile west of Hot Spring Slough. pre-ANILCA
13. A plastic covered "cabin" along Kettili Slough.
14. A cabin on north bank of Stikine River, 2 miles west of Shakes Slough.
15. A cabin along Kakwan Slough.
16. A cabin on the east face of Kakwan Point.
17. A cabin on a float with shore ties in Andrews Creek.
18. A cabin along Andrews Creek.
19. A cabin near the center of the Cottonwood Islands. pre-ANILCA
20. A cabin at the west end of the Cottonwood Islands. pre-ANILCA
21. A cabin on the east end of Farm Island, along Hooligan Slough
22. A beached boat in a drainage on Farm Island along the upper North Arm.
23. A cabin on Farm Island along the middle North Arm. pre-ANILCA
24. A cabin on Farm Island, .5 miles east of Knig Slough. pre-ANILCA
25. A cabin on Dry Island, 1.5 miles west of Knig Slough. pre-ANILCA
26. A cabin on the south point at the mouth of LeConte Bay. pre-ANILCA
27. A cabin on the north point at the mouth of LeConte Bay. pre-ANILCA

BIOLOGICAL

The Wilderness supports a full range of life zones, from the estuarine to the

ENVIRONMENT

alpine. These zones all occur within a few miles from salt water due to the rapid rise in elevation.

Fisheries

Coho, chum, pink, sockeye, and king salmon, white fish, sturgeon, and eulachon are found in the Stikine River or tributary stream systems. Cutthroat trout and Dolly Varden occur in most side stream systems. Halibut, shrimp and crab can be found in LeConte Bay. The fishery resource is used for commercial, sport, and subsistence purposes. The potential for fishery stocks, and scientific studies continue on salmon runs of the main river channel. Completion of ANILCA 507(a), Cooperative Fisheries planning will provide determinations for future projects.

Wildlife

Wildlife found within the Wilderness include big game species such as mountain goat, black bear, brown bear, moose, and a few scattered Sitka black-tailed deer. The mountain goat are found primarily in all the higher elevations, notably the steep rocks of Horn Cliffs and those surrounding LeConte Bay, Goat Lake, and Andrews Creek. The moose are located primarily along the Stikine River system valleys.

The list of smaller fur bearing animals common to the area includes beaver, mink, land otter, weasel, marten, wolverine, and wolf. Harbor seal are very plentiful in LeConte Bay, especially during early spring when the many icebergs are utilized by the seal for pup rearing.

The Stikine River tideflats provide one of the major resting and feeding areas for waterfowl in southeast Alaska along the Pacific flyway. Waterfowl are abundant during spring and fall migrations. The primary species include several subspecies of Canada goose, snow goose, sand hill crane, swans, and ducks such as mallards, pintails, widgeon, shovelers, blue-wing teal, and green-winged teal. Shore birds and sea ducks are also found in abundance along the shoreline waters. Barnes Lake and smaller pond areas along the river bottom receive a large amount of trumpeter swan use until the water freezes. Game birds of significance are blue grouse and ptarmigan, but populations rarely attain high numbers except for isolated high populations in the Wilkes Range and in the Andrews Creek drainage. A wide variety of other bird life is also found throughout the area including bald eagle, varied thrush, Rufus hummingbird, snipe, yellowlegs, gulls, Arctic tern, Stellar jay, robin, woodpeckers, crows, ravens, warblers, sparrows, and juncos.

The potential for wildlife habitat enhancement exists. Preliminary results from studies on moose conducted by the Alaska Department of Fish and Game (ADF&G) indicate habitat manipulation may be beneficial. Other studies conducted by the United States Fish and Wildlife Service have documented the seasonal abundance and distribution of waterfowl, eagles, and songbirds. Further studies will be needed to determine the impacts of habitat manipulation upon these species.

Vegetation

The Stikine River is a U-shaped valley with spruce and hemlock forest along the valley wall giving way to alder, willow, cottonwood, and occasional spruce in the valley bottom and on the many islands in the river. Muskeg vegetation is also predominant in many places of the valley bottom and on the larger islands. On the tideflats, the vegetation is primarily rushes and sedges in the estuarine areas proceeding to grasses, forbs wildflowers, and shrubs in the more upland areas. Small plants and lichens are typical of the sub-alpine areas above timberline. Several unusual plant associations exist in the wilderness. One is the willow and cottonwood flats of the Stikine River bottom, which is generally absent in Southeast Alaska. The other is due to the wind deposited soils, called

loess. These loess soils occur on the islands and slopes at the rivers mouth, and support a unique association of Sitka Spruce/Devil's Club forest type.

T & E Species

No species of plants or animals which are presently listed by the Federal Government or the State of Alaska as threatened or endangered in Alaska are known to be found within the Wilderness.

SOCIAL ENVIRONMENT

Wilderness

Natural Integrity - The area overall has maintained its natural integrity. The river corridor has been impacted by the hand of man, but still maintains a high degree of natural integrity. Impacts in the river corridor include the numerous public and permitted facilities, channel clearing of logs and dredging of gravels, accelerated wave action and bank erosion due to motorized traffic, the intense concentration of hunters primarily in the moose season, and the channeling and development of the natural hot springs.

Apparent Naturalness - Developments are relatively simple and located near the main Stikine River system. The majority of the Wilderness is characterized by an essentially unmodified natural condition. The natural appearance of the area provides spectacular vistas and a variety of scenery. Some of the developments on private land and at the pre-ANILCA special use permitted cabins do not appear as natural. Some of the private buildings and the maintained lawns around them are not rustic and stand out. The building and large lawn on Sergief Island are quite noticeable being located at the entrance to the main channel to the river. About ten acres of trees on the private land on Sergief Island have been cut.

Opportunity for Solitude - With the exception of the Stikine River Valley, which is a major travel corridor for both water and aircraft, persons using the area can expect a moderate to high probability of experiencing isolation from the sights and sounds of humans. Within the Stikine River Valley, the sights and sounds of humans are common and almost constant. Aircraft travel up and down the valley from first light to dusk. Boats, mostly pleasure craft, ply the river around the clock during the summer months.

Users of the hot tubs at Chief Shakes Hot Springs go so far as to bring portable stereo systems. Use of the hot tubs is commonly accompanied by consumption of large amounts of alcoholic beverages. Many of these users are minors. The conduct of users who have been drinking is often objectionable and is in fact often quite dangerous. Irresponsible use of firearms and operation of high powered boats by intoxicated users is common. An increasing number of complaints about such activities are being received. There has been one fatality involving a boat in the Warm Springs Slough and numerous injuries from boat accidents all along the river. Fights and similar behavior have resulted in injury to Forest Users at the site.

On a warm sunny day, as many as twenty boats may congregate in Twin Lakes to water ski and recreate. Well meaning citizens bring their gasoline powered lawn mowers and weed whackers and clear portions of the bank areas of Twin Lakes to provide cleared areas in which to picnic. These areas are also used for rather extensive parties involving the consumption of alcoholic beverages.

In the fall the canyon is filled with the sounds of boat motors, power generators, chainsaws, and chainsaw winches as more than 60 hunter camps

participate in the annual moose hunt. The motorized nature of these uses seriously deplete the quality of the Wilderness experience.

Opportunity for Primitive Recreation - Except for the situations along the Stikine River described above, visitors in this wilderness can experience a high degree of independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk. Some of these opportunities include fishing, hunting, skiing, mountain climbing and observing and photographing nature.

Recreation

Public Facilities - Twelve Forest Service public use cabins are located within the Wilderness, seven on the tideflats and five on the main river. These cabins serve as a base camp for waterfowl hunting, sportfishing, boating, picnicking, water and snow skiing, hot tubbing, recreational prospecting, and general recreation. The five cabins on the main river are heavily used for moose hunting but represent only a small part of the use during that period of time. Most of the moose hunting is done from private land cabins, special use permit cabins, temporary campsites, float houses and trespass facilities. The Forest Service cabins are A-frame, modified A-frame or hunter style and in good to excellent condition. The seasonal capacity of these cabins is 13,863 Recreation Visitor Days (RVD's) over an average 200-day season. The highest recorded use was in 1977 with 3,820 RVD's. Current use is about 3,300 RVD's or one-fourth of the maximum potential capacity.

Public opinion approves of these cabins, but suggested the placement of some could be improved. An example is the Twin Lakes cabin. It was moved out to the mouth of the Twin Lakes Slough on the North Arm of the Stikine River to improve access which had been blocked by low river levels at various times of the year. This was done in 1985 and use increased immediately.

Chief Shakes Hot Springs is a natural geothermal feature that was reportedly used by Tlingit Indians. This Forest Service developed recreation site is located on a back slough of the Stikine River, and features one enclosed hot tub and one open-air hot tub. Public use of the Hot Springs indicated a minimum of two tubs are needed to satisfy demand. Over the years, a minimum of two tubs have been present in some form or another. The facilities were developed under Forest Service administration as a means of diminishing or eliminating private individuals' well meaning, but unsafe and unhealthy construction efforts, and general site degradation and vandalism. A recent project at the site reflected public opinion in the planning and final product. The public has accepted the replacement enclosed tub, which was rebuilt in 1981 and the open-air tub which was rebuilt in 1985, very well. Care was taken to utilize cedar post, siding, and shingles to make the structures blend into the environment. The old tubs were in a state of disrepair and did not meet recommended standards for resource protection and health and safety concerns. Rehabilitation was necessary to assure the public health and safety and desired compatibility. A high water and low water boat landing existed. Both have been reconstructed to stabilize the stream banks, provide safe access for users of the site, and to be compatible with the Wilderness.

A summary of public recreation facilities is as follows:

Site Name	Location	Capacity	Kind
Binkley Slough	Tideflats, Farm Island	6	Cabin
Gut Island #1	Tideflats, Farm Island	6	Cabin
Gut Island #2	Tideflats, Farm Island	4	Cabin
Koknuk	Tideflats, Sergief Island	4	Cabin
Little Dry Island	Tideflats, Little Dry Island	7	Cabin
Mallard Slough	Tideflats, Mainland	7	Cabin
Mount Flemer	Stikine River, near Kikahe River	7	Cabin
Mount Rynda	Stikine River, near Andrew Slough	7	Cabin
Sergief Island	Tideflats, Sergief Island	4	Cabin
Shakes Slough #1	Shakes Slough/Stikine River	4	Cabin
Shakes Slough #2	Shakes Slough/Stikine River	7	Cabin
Twin-Lakes	Stikine River, near Twin Lakes	7	Cabin
Chief Shakes Hot Springs	Slough near Ketili & Stikine River	15	Bath House

A picnic ground with tables and a pit toilet existed at Twin Lakes in response to public use of the site for day-use recreation. It was removed in 1984 as a result of the appeal of the Stikine-LeConte Management Plan. The area still receives a large amount of use such as water skiing and some loud parties that are not compatible with Wilderness solitude and result in litter problems. Users voluntarily maintain a portion of the area in a cleared condition, but unfortunately, this volunteer effort is decidedly non-wilderness in both execution and style.

Trails - Several short developed trails currently exist, but are within or closely associated with previously mentioned recreation sites. Chief Shakes Hot Spring, and several of the cabins have brushed out trails about 1/4 mile long leading to boat landings or accessing dispersed recreation opportunities. The addition of some plank tread occurs in a few instances to protect the trail from degradation. In past practice, the trail work accomplished has been the minimum needed to assure public health and safety while providing limited visitor dispersion. Formal system trails include the following:

Trail Name	Number	Length
Shakes Hot Springs	625	0.3 miles
Mallard Slough	626	0.5 miles

Commercial Use - Outfitter-guides operate in this wilderness, predominately from June through September. This activity has grown over the past few years, and the four permits currently held are the highest total for the area. One of the outfitters caters to float trips originating from Telegraph Creek in British Columbia. Another caters to canoe and kayakers going into LeConte Bay. The other two outfitters provide fishing and sightseeing services on the river. All of these outfitters are dependent on some form of mechanized transportation, either directly, such as boats, or indirectly, such as float planes for pick up and drop off. Overall, their use can be described as light to moderate. In addition to the outfitters under permit, several other commercial outfitters are suspected of unauthorized operations. About four to six of these unauthorized outfitters are believed to be involved in day trips and transportation services. Air charter services also operate in the Wilderness providing transport of people

and supplies to recreation sites on the river and some lakes. Some outfitter-guides use the air charters to move their personnel and clients.

Pre-ANILCA Visitor Services - One outfitter, Alaska Discovery out of Juneau, was under permit prior to the 1980 establishment of the Wilderness. It is suspected that several unauthorized outfitters operated prior to this time also, but none have come forth.

Dispersed Use - The Stikine-LeConte Wilderness is at the back door of Wrangell and Petersburg. At this time, much of the use is by the residents of these communities but use by other than local residents is increasing. The non-local user is more likely to perform at least part of their use with non-motorized transportation and the motorized portion of their trip will probably be provided by a commercial transporter.

Many areas and sites are used for dispersed recreation. However, the small quantity of readily accessible area, limited aircraft access to lakes, and tide fluctuations that restrict boat access, limit the overall use. Consequently the vast majority of the use occurs on the river corridor and the strip of land immediately adjacent to it. LeConte Bay also receives a fair amount of use, however users seldom come ashore.

The entire Stikine River Valley offers spectacular scenery and excellent opportunity to view wildlife, from moose to voles, and swans to hummingbirds. Photography opportunities are many and varied, and such uses are increasing. They consist mainly of day trips by boat, and flight seeing. These uses are especially popular with non-local users.

Horn Cliffs, Jap Creek, Popof Mountain and the Wilkes Range are used for goat hunting. The North Arm of the Stikine, Mallard Slough, and the tideflat areas are used for waterfowl hunting and moose hunting. Many sites along the entire river valley are used for moose hunting. Fishing occurs at the mouth of several streams and picnicking and camping on Limb Island, the Desert, and Twin Lakes.

Float trip participants enjoy the many side sloughs and tributaries, but find themselves at risk to power boats screaming by at 30 to 50 miles per hour. Each year sees an increasing number of complaints about irresponsible and dangerous operation of powerboats. Not all of these complaints come from non-motorized travelers. The District has received complaints from a wide spectrum of users on this topic. The complaints range from stating that there are going to be serious injury to a statement from a potential outfitter/guide who stated he would not take anyone who was a paying customer to the Hot Springs area, because the way the present users were conducting themselves was not only rude and offensive but dangerous. The exact number of visitors and the time spent in the various activities is not well documented but we are gathering more information each year. A number of boating accidents have occurred in past years and there have been fatalities.

Some snowmobile use occurs in the winter, mainly from local users who transport their machines by boat to the frozen river. Users also transport motorcycles and 3 and 4 wheeled all terrain vehicles into the wilderness for use on sand bars and areas such as the Desert.

Recreation Opportunity Spectrum - About 257,700 acres (57%) are inventoried as Primitive I, and another 21,600 acres (5%) as Primitive II. Semi-primitive

non-motorized classification accounts for 73,900 acres (17%), and another 95,500 acres (21%) are inventoried as Semi-primitive motorized.

Access - Primary access to sites along the Stikine River system is by boat or float plane, and snowmobile in winter when the river freezes up. There are also reports of helicopters associated with mineral activities in Canada, landing frequently at the Shakes hot tubs. Fixed wing aircraft also land in Ketili River and taxi to the warm springs slough to the low water dock at the hot tubs. Other fixed wing uses include wheel landings at the area known as The Desert, at Little Dry Island in the Stikine flats, between the Sergief cabin and the middle arm of the Stikine river and float landings along Knig Slough. Flight seeing occurs over the icefields and LeConte Bay primarily via fixed wing aircraft, but landings would only occur in emergencies. Except for the access afforded by aircraft, salt water and the Stikine River system, the Wilderness is relatively inaccessible and undisturbed by the activities of man. Even along the Stikine River, nature quickly reclaims or alters man's activities so as to conceal past presence, such as through annual flooding and daily fluctuations.

Pre-ANILCA helicopter Landing Sites - Some use is documented by a letter from Temasco Helicopters, Inc., dated August 22, 1989. The specific sites, purpose of the trips and amount of use is displayed. They define heavy use as 5-25 trips per year, moderate use as 1-5 trips per year, and light use as at least one trip every two years. The areas, level of use and purpose are as follows:

Heavy use

LeConte Glacier:	Sightseeing, Filming, Educational trips, Glacier research, Wildlife research, Prospecting and Mining.
Fish Creek:	Sport fishing
Devils Thumb:	Mt. Climbing, Skiing
Chief Shakes Warm Springs:	Camping, Day trips
Andrews Creek:	Sport fishing, Supplying Cabins
Horn Cliffs:	Sightseeing

Moderate use

Mining claims north of LeConte Bay:	Mining and Exploration
Mining Claims in Kikahe River:	Mining and Exploration
Private lands in mouth of Stikine River:	Transport of goods and people
Stikine River Valley:	Landing along entire river for fishing, mining support, fisheries and wildlife research, camping, rafting, surveying, mapping, road, trail and powerline surveys, staging area for activities in the surrounding areas, safe landing areas to wait out weather.

Stikine Icefield:

Mt. Climbing and Skiing

Recreation Use - Estimated RVD use for the Stikine-LeConte Wilderness for the last five years, by ROS class, is as follows:

YEAR	TOTAL RVD's	RVD's By ROS Class			
		Primitive I	Primitive II	SPNM	SPM
1984	7400	74	74	222	7,030
1985	7300	73	73	219	6,935
1986	8800	88	88	264	8,360
1987	7450	75	74	224	7,077
1988	7700	77	77	231	7,315

Cultural/Historic

The history of the Stikine River itself is long and colorful. Through the years, it has served as a major transportation corridor through the Coast Mountains to the interior for Native and white hunter, trader, and prospector.

At the time of European contact, the Tlingits had many seasonal hunting and fishing camps on the islands at the mouth of the Stikine and along the river as far up as what became Telegraph Creek, British Columbia. There were several Chief Shakes of the Tlingits and one of them is said to have often used the hot springs which now bears his name. In the early 1800's, the river provided access to Russian and British fur trappers and traders. The mid-1800's produced the first gold rushes along the Stikine route. In the 1850's and 60's, small gold strikes in Canada brought the first rush through the area. From 1872 to 1878, the gold rush to the Cassiar region of Canada brought considerably more activity to the Stikine River. Steam powered riverboats commonly plyed the waters, bringing prospectors and supplies through the area.

An international treaty was signed by Great Britain and the United States in 1871 to allow free and open navigation on the river for purposes of commerce to the subjects of Great Britain and the citizens of the United States. The treaty remains in effect. During the late 1800's and early 1900's, the river provided one of the main access routes for miners and others on their way to the gold fields of the Yukon and Northwest Territories. Cottonwood Island was a temporary camp for up to 800 people waiting to set out for the Klondike. The river continues to provide one form of access to Telegraph Creek, the only permanent community on the river. Telegraph Creek is often the starting point for a 150-mile float trip down river to salt water.

The Canadian portion of the Stikine River is utilized for commercial fishing. Private land exists at the mouth on Camp, Farm, and Sergief Islands, much of which originated from early homesteads. The primary use of the river and the rest of the Wilderness is for recreational activities. The use of the private land is oriented toward recreational use or simple homestead lifestyles but these activities and uses are often carried out in non-wilderness style, and perpetuate misuse of the surrounding Wilderness. People use ATV'S and all imaginable power tools and equipment on these lands and many see nothing wrong with going where they please, as they please, on the adjoining Wilderness lands. ATV'S operating on the private lands intrude into the adjoining wilderness on a regular basis. ATV's use within the Wilderness also originates from a pre-ANILCA special use permitted cabin.

Visual Resources

The Wilderness contains a myriad of spectacular scenery. Block like mountains rise up from sea level and are often capped in ice or snow. Glaciers and snowfields extend for many miles, particularly in the northern portion. Two active glaciers can be reached by boat relatively easy, at LeConte Bay and Shakes Lake, affording spectacular viewing opportunities. The variety of vegetation offers diversity in the landscape along with the numerous mountains, cliffs, waterfalls, and waterways. Wildlife is abundant and can often be observed and photographed from boats. Favorite subjects include moose, black and brown bears, mountain goats, eagles, and waterfowl. The massive Stikine tideflats at low tide provide an infinite mosaic of patterns and rivulets, at a scale that is difficult to comprehend.

Traveling by boat, many of the vistas are framed as one travels up the Stikine River. Every bend of the river provides new vistas and distinctive scenes. Some of the sloughs provide the opposite scenery, such as narrow waterways bordered by thick overhanging vegetation to produce a tunneling effect.

Traveling by plane, the scale of the landscape is apparent. Pristine valleys surrounded by steep glacially scoured walls, interrupt the numerous mountains. Glaciers such as LeConte, Popof, Summit, and Shakes can readily be seen from the air, as can the rocky summits of many peaks.

The only exceptions to this pristine setting are the few developments along the river, which are generally rustic in nature, and are generally compatible with the immediate surroundings. Some of the special use permitted pre-ANILCA developments and some of the facilities on private land are not as compatible with the expanse of natural beauty. However these facilities are generally few. Much of the private land is near the mouth of the river, or the gateway for most recreationists. Further development or alteration of these lands could have a negative impact on the surrounding features.

Subsistence

The role of subsistence in the lifestyles of Wrangell and Petersburg residents is low. The primary subsistence resources acquired from the Stikine-LeConte Wilderness are moose, waterfowl, and fish. Residents who utilize these and vegetative resources generally acquire them through recreational activities. No known residents are totally dependent on these resources for a livelihood or existence at the current time. Most who utilize the Wilderness in the taking of fish and wildlife are principally participating in outdoor recreational activities. State fish and game regulations do not currently give priority to subsistence use or users in this area.

Scientific Values

The Stikine River provides one of the few corridors through the Coast Range mountains of Southeast Alaska. Wildlife such as moose, utilize this corridor and have established themselves in the area because of this. The Alaska Department of Fish and Game is constantly monitoring and studying fish and wildlife populations throughout the area. The United States Geological Survey maintains a stream gage station on the river

The Forest Service has established plots to monitor air quality, by focussing in on lichens. Studies have also been done to see what effect motorized boat traffic has on accelerating bank erosion. Some plant and soil surveys have also been done. In the early 1980's the Canadian government was considering construction of a dam on the upper end of the Stikine River. Consequently a

number of plant studies were done in the river bottom to establish some baseline information.

The loess soils deposited at the mouth of the river are of interest to the ecologist and hydrologist. A recent effort to identify potential Research Natural Area additions to the system, identified Kadin Island, just outside of the Wilderness, as a possible candidate. Similar or comparative situations are likely within the Wilderness. This study also identified the Twin Lakes area as a possible addition to the Research Natural Area system. This was based on various plant associations in the area and the presence of two warm springs.

The size of the Wilderness, and variety of organisms and processes displayed here are likely to draw the attention of researchers in the future. The nearby proximity of Wrangell, and presence of administrative cabins, can provide opportunities for logistical support of these activities.

(INSERT MAP OF STIKINE-LECONTE WILDERNESS HERE)

TEBENKOF BAY
WILDERNESS

ADMINISTRATIVE FACTORS

Location

The 66,839 - acre Tebenkof Bay Wilderness is located within Value Comparison Units (VCU's) 404, 405, 406, and 407, on the west side of Kuiu Island 50 miles southwest of Petersburg. Chatham Strait lies off its western border. The Tebenkof Bay Wilderness is located entirely within the Petersburg Ranger District of the Stikine Area, Tongass National Forest. A legal description is on file at the Petersburg District Office in Petersburg, Alaska. There are no administrative facilities within the wilderness.

Administrative
Facilities

Administrative facilities are located at the Petersburg Ranger Station in Petersburg, Alaska. There are no administrative facilities in the wilderness.

PHYSICAL
ENVIRONMENT
Geography

The Tebenkof Wilderness geography is made up of typical southeast past glaciated terrain. Elevations range from sea level up to a 3355' mountain. Tebenkof Bay itself is a complex system of bays, coves, small islands and rocky islets.

Climate

Maritime weather dominates Southeast Alaska. Normal temperatures range from the 40's to mid - 60's F. in winter. In summer, cooler temperatures occur on or near the outer coasts while warmer temperatures prevail farther inland. In winter, the reverse is true. Extreme temperatures occur in both winter and summer when air masses from Canada override the coastal mountains, bringing clear skies and continental air to the archipelago.

Storms and moderate to heavy precipitation occur throughout the year, although storms are most frequent and precipitation is heaviest from September through November. In winter, snow falls frequently throughout the region and accumulations of 20 to 100 inches or more are not uncommon depending upon the elevation.

Surface winds are moderate to strong throughout Southeast Alaska. Prevailing winds generally blow from the south or southeast, except where local topography influences wind directions. Certain conditions of temperature and pressure gradient may also substantially increase winter wind velocities.

Air

Air quality in Southeast Alaska is generally very good. There are relatively few major emissions sources in the region, and pollutants are rapidly dispersed by winds and removed by precipitation.

Fire

The incidence of forest fires in the Tebenkof Wilderness is extremely low. Summer rainfall and the relative infrequency of summer electrical storms are major factors in reducing wildfire potential. Wildfires are generally small and human caused and due to escaped campfires.

Minerals

As of the March 1, 1989 Bureau of Land Management Mining Claim Report, there are no mining claims existing in the wilderness.

Water Quality

Approximately 35 drainages, ranging in size from 1-10 square miles, drain the Tebenkof Bay Wilderness. The largest drainage, Alecke Creek, (ADF&G #109-62-10130), which drains Alecks Lake (35 acres) is seven miles long. Approximately two square miles of this watershed, east and north of Alecks Lake, are outside the wilderness.

The water quality of these drainages is typical of Southeast Alaska; slightly acidic and discolored due to the presence of tannic acid, but free of man-made pollutants.

Soils

Tebenkof Bay is an area with predominantly deep, well drained, soils on steep to very steep forest covered lower slopes, and shallow poorly drained soils on steep to very steep slopes at higher elevations and on ridgetops.

Extensive areas of gently sloping muskeg and other poorly drained organic soils are along the southern part of Tebenkof Bay, particularly in the Petrof Bay area. These soils are typically wet.

Very steep areas of mountains and valley sidewalls, with numerous V-notches, avalanche tracts and landslide tracts occur, especially along the northern shore of Tebenkof Bay. Here the soils are typically shallow and stony. Mass soil movement and erosion commonly occur in these areas.

Some stream bottom areas of alluvial soils occur throughout the area, along Alecks Creek, at the head of Elena Bay and Piledrive Cove. These soils are typically level and well drained, but flood periodically.

Alpine areas have steep to very steep, poorly drained organic and mineral soils, typically with extensive areas of bedrock exposures. Soil temperatures are typically low and growing seasons are short at these high elevations, usually above 2,000 feet.

Lands

Status - The Tebenkof Wilderness area has three inholdings, all of which were Native Selection Lands of the Sealaska Corporation as allowed by the Alaska Native Claims Settlement Act of 1971. These parcels are the Tebenkof Village (13 acres), the Elena Bay Village (13.8 acres) and the Alecke Creek Village (3 acres).

Non-recreation SUP's - One non-recreation special use permit exists which authorizes a pre-ANILCA waterline for a fish buying scow in Gedney Harbor. A special use year round residence exists on Mira Island. The cabin is virtually unnoticeable as it is hidden behind the small islands.

Temporary Facilities/Camps - No other known temporary facilities or camps exist in the area.

BIOLOGICAL ENVIRONMENT Fisheries

Streams within the Tebenkof Bay wilderness support runs of pink, chum, coho, and sockeye salmon, anadromous rainbow trout (steelhead), cutthroat trout, and Dolly Varden Char.

Adult returns of pink salmon to Alecks Creek and Petrof and Thetis Bay are outstanding. Pink salmon returns have approached their historic levels in recent years. Returns of coho and chum salmon are also excellent. A fish laddering opportunity at Wolf Creek has been evaluated and construction drawings have been completed. Implementation of this project is dependant on resolution of the issue of aquaculture facilities in Wilderness.

Steelhead populations are present in Alecks Creek as well as several other of the larger streams in the bay.

Wildlife

The streams, lakes, beaches, islands, wooded area, alpine area, and muskegs provide a diversity of habitat and an abundance of food and cover which supports a variety of wildlife species, including:

Bald Eagles	Beaver
Sitka Black-tail Deer	Martin
Black Bear	Weasel
Timber Wolf	River Otter
Grouse	Mink
Geese	Moose

The area is especially noted for its furbearer populations of martin, mink, and river otter due to the extensive beach fringe habitat. Deer number are presently low throughout the area compared to previous years. As a result, all of Kuiu Island is presently closed to deer hunting. The area has above average black bear populations.

Bald eagle habitat is excellent and a significant population occurs in the area. It is common to see more than 20 Bald Eagles at the mouths of the more productive salmon streams in Elena Bay. Numerous sea, shore, and land birds inhabit the area. Trumpeter Swans use portions of the area seasonally. Marine mammals include humpback whales, orca, harbor seals, and Steller's sealions. Humpback whales are the only known endangered species in the vicinity.

Vegetation

Forest stands in the Tebenkof Bay Wilderness are composed primarily of western hemlock and Sitka spruce, with minor amounts of Alaska-cedar. Dwarf mountain hemlock and lodgepole pine are found in the muskegs and alpine areas. Alder is found along the streams and dominates the snowslide and landslide areas in the mountains north of Elena Bay.

There are four circa 1960 clearcuts, 15-66 acres, which occur directly west of Thetis Bay. One other clearcut from about 1960 of 82 acres occurs NNW of Happy Cove. These clearcuts have 1500-1800 hemlock/spruce trees per acres, averaging 4"-5" in diameter, 40' in height.

The forest understory is dense in the old-growth timber stands and is comprised primarily of blueberry, rusty menziesia, and devil's club. Sphagnum moss, sedges, brushes, and shrubs are commonly found in the muskegs. Low, mat-forming vegetation adapted to snowpack and wind abrasion such as heaths, grasses, and deer cabbage dominate the alpine areas.

No threatened or endangered species are known to exist in the Stikine-LeConte Wilderness.

SOCIAL
ENVIRONMENT
Wilderness

Natural Integrity - The natural integrity of the Tebenkof Bay Wilderness is very high. With the exception of a small area east of Alecks Lake, all drainages entering Tebenkof Bay are entirely within the wilderness. The boundary follows ridgelinea encircling the bay so that these ridges enclose the area as it's own entity.

Apparent Naturalness - The apparent naturalness of the area is very high and appears that little has been altered by humans. One special use cabin exists but it is hidden well behind an island. Several old clearcuts exist but are practically unnoticeable.

Opportunity for Solitude - This wilderness provides excellent opportunity for solitude. This opportunity can be slightly reduced when a commercial fishery is open and up to 10 boats may be working the area. Some people recreating in the Alecks Lake area have commented on the noise from road building machinery working in the Three Mile Arm area

Recreation

Public Facilities - No public facilities exist within the wilderness.

Trails - There are two portage trails (Affleck Canal Portage and Alecks Creek Portage) both of which are rough, very difficult trails. Another trail used to access the area, but outside of the wilderness, is the Bay of Pillars Portage.

Trail Name	Length
Affleck Canal Portage	1.5 miles (.8 miles in Wilderness)
Alecks Creek Portage	4.0 miles (2 miles in Wilderness)
Bay of Pillars Portage	1.2 miles (no miles in Wilderness)

Commercial - As of the fall of 1989, there were five outfitter/guides permitted for the bay. More applicants are expected in the near future. These uses include Kayaking, fishing, and bear hunting. Due to the difficulty of access for out of state visitors, this area especially lends itself to the outfitter/guide business.

Pre-ANILCA Commercial Visitor Services - No pre-ANILCA commercial visitor services existed under permit in this area.

Dispersed Use - The remoteness of Tebenkof Bay results in low dispersed use of the area. Visitor use is primarily saltwater oriented. Black bear hunting occurs in the spring and fall along the beaches and major streams. During April and May several of the streams are utilized for steelhead fishing. Kayaking and canoers use the area during the summer months. Kuiu Island overall has been experiencing a recent growth in steelhead fishing and kayaking.

Recreation Opportunity Spectrum - The ROS acreages for this wilderness are 40,200 (60%) in Primitive I and 23,500 (35%) in Primitive II. Another 2,400 acres (3%) are inventoried as semi-primitive motorized, and 1,400 (2%) acres are considered roaded modified.

Access - Most people access the wilderness by boat or by aircraft. Occasionally Kayakers portage over one of the two trails entering the bay. There are no

commercial services such as rental cars or boats on Kuiu Island. The logging community of Rowan Bay is north of the Tebenkof Bay Wilderness on Kuiu. For those with vehicles, roads radiate out from this community and access the east side of the wilderness. Boaters and Kayakers entering the Bay from the west must travel long distances over fairly open and exposed waters in Chatham Strait. The nearest ferry service is in Kake, on the northwest part of Kupreanof Island. Kayakers departing from Kake have the option of traveling down Keku Straits to the Alecks Creek or Affleck Canal Portage to enter the Bay. Another option for Kayakers from Kake is to travel down Port Camden to the Bay of Pillars Portage, and then out the Bay of Pillars to Chatham Strait for a brief period before entering the bay from the west.

Pre ANILCA Helicopter Use - Few people use a helicopter to access this wilderness, primarily due to the long and consequently expensive flight. However some use has occurred as evidenced by the Temsco Helicopters Inc. letter of August 22, 1988. They report 1 to 5 trips per year for the purpose of sportfishing or beach combing. Temsco has listed all of Tebenkof Bay Wilderness as having been used for landings and mentions Rainbow Creek specifically.

Recreation Use - A summary of recreation use over the past five years follows.

YEAR	Total RVDs	RVD's By ROS Class			
		Primitive I	Primitive II	SPM	RM
1984	685	34	514	103	34
1985	900	45	675	135	45
1986	2973	149	1,487	1,189	148
1987	3005	150	1,503	1,202	150
1988	3555	178	1,778	1,422	177

The substantial increase between 1985 and 1986 is due to the inclusion of a special use year round residence which had not been included before. Kayaking and steelhead fishing have also experienced increases.

Cultural Resources

Historically, the Tlingit Natives of Kake and Klawock claimed Tebenkof Bay. They trapped, hunted, fished, gathered seaweed and gardened throughout the area. Remnants of native subsistence camps/villages occur in the area today. In 1979, three Native Historic sites were inventoried and evaluated by the Bureau of Indian Affairs and the Cooperative Park Studies Unit for selection under the Alaska Native Claims Settlement Act (1971). These sites were approved by the Forest Service for selection as Native Historic Sites.

An intensive cultural resource inventory conducted in 1988 and 1989 resulted in the identification of 127 cultural sites within the Wilderness. These consist of prehistoric and historic period Tlingit sites, including villages, temporary camps, fort sites, garden areas and fish traps and weirs. Evidently, both Kake and Kuiu Tlingit clans considered Tebenkof Bay their home. The residents of the bay were apparently decimated by a smallpox epidemic in the 1830's and some people moved to the Kake area while others went to Klawock.

Early in the 20th century, canneries expanded into the coastal water of SE Alaska, including Kuiu Island. At least one of these enterprises operated within Tebenkof Bay.

At about the same time, the commercial raising of blue and white foxes spread throughout SE Alaska. More than 30 such fur farming operations occurred on the islands within Tebenkof Bay. Most of these operations were abandoned in the early 1940's, phasing out completely by the mid 1960's.

Commercial fishermen have used the area extensively in the past and continue to do so today, primarily for troll caught salmon. Known commercial fish camps have occurred in Gedney Harbor, Explorer Basin, and on the Goat Islands.

There are remnants of logging camps in Happy Cove and in Thetis Bay from logging activities which occurred in the early 1960's.

Visual Resources

The Tebenkof Bay Wilderness exists in relatively pristine state. A traveler heading into the bay from Pt. Ellis may notice the 82 acre second growth stand N of Happy Cove in the middle ground with background views of the 3000' mountains which form the NE boundary of the wilderness. Inside the bay E. of Troller Islands, foreground and middleground views of saltwater channels interspersed with numerous islands dominates the visual perceptions of the visitor. Background views of low lying ridges which form Eastern and Southern boundaries of the wilderness, are subtle in appearance.

Although numerous Fish Camps and Fox Farms have occurred throughout the area in the port, they are virtually unnoticeable to the visitor traveling on the water.

Subsistence

The area is reported to have low subsistence use. Fishing for sockeye salmon on Alecks Creek is known to have occurred.

Scientific Values

The primary scientific value identified so far at Tebenkof Bay are its cultural resources. These are mainly the historic and prehistoric Tlingit sites. The remoteness of the area and its status as Wilderness have resulted in an area which is relatively undisturbed. The concentration of sites also gives this area added significance. In addition to these sites, other sites associated with SE Alaska, such as canneries, fur farms, and old logging along the beach are found here.

A lichen study to monitor changes in populations associated with air quality changes was implemented in 1989 by the Forest Service, and includes Tebenkof Bay. Several plots were established in 1989 and will be monitored over time.

(INSERT MAP OF TEBENKOF WILDERNESS HERE)

TRACY ARM-FORDS TERROR
WILDERNESS

ADMINISTRATIVE FACTORS

Location

The 653,179 acre Tracy Arm-Fords Terror Wilderness area is located about 50 miles southeast of Juneau, Alaska at the mouth of Holkham Bay adjacent to Stephens Passage. The area is designated within the Tongass Land Management Plan (TLMP) as Management Area C-11 and is composed of Value Comparison Units (VCU's) 62C, 63C, 65C, 67C, and 78C. The Tracy Arm-Fords Terror Wilderness is located entirely within the Juneau Ranger District of the Chatham Area, Tongass National Forest. A legal description is on file at the Juneau Ranger District Office in Juneau, Alaska.

Administrative
Facilities

Tracy Arm-Fords Terror Wilderness is managed out of the Juneau Ranger District office in Juneau. There are no administrative facilities in the wilderness.

PHYSICAL ENVIRONMENT
Geography

The Tracy Arm-Fords Terror Wilderness is located within the Coast Range Visual Character Type and represents the most distinctive landscape variety class of this type. Elements exhibited within the wilderness include many large, massive landforms. Upper elevations reach 5,000 to 7,000 feet and are dominated by icefields. Jagged peaks are apparent throughout the higher elevations. The area is bordered on the west or ocean side by cliffs that plunge several thousand feet to the water below. To the east lies the Canadian border with vast icefields.

Tracy Arm and Endicott Arm are large fiords that appear as forest covered hillsides along their wide entrances. Vegetation becomes sparse and gives way to smooth glacially scoured rock walls. Both fiords offer dramatic water features including cascades, waterfalls, and icebergs floating in the salt water. Actively calving glaciers are presented at the end of long vistas formed by steep canyon walls.

Fords Terror is an extremely narrow, deep passage containing steep cliffs and rock escarpments. Water features include cascades, waterfalls, and surging water at its entrance during the changing tides. This water surge frequently exceeds fifteen knots and often shoots spectacular "rooster tails" off the rock walls.

Climate

Maritime weather dominates Southeast Alaska. Normal temperatures range from the 40's to mid-60's F. in summer, and from the high teens to low 40's F. in winter. In summer, cooler temperatures occur on or near the outer coasts while warmer temperatures prevail farther inland. In winter, the reverse is true. Extreme temperatures occur in both winter and summer when air masses from Canada override the coastal mountains, bringing clear skies and continental air to the archipelago.

Storms and moderate to heavy precipitation occur throughout the year, although storms are most frequent and precipitation is heaviest from September through November. In winter, snow falls frequently throughout the region and accumulations of 60 to 100 inches or more are not uncommon. At higher elevations more than 200 inches of snow may fall and accumulate each year.

Surface winds are moderate to strong throughout Southeast Alaska. Prevailing winds generally blow from the south or southeast, except where local topography

influences wind direction. Certain conditions of temperature and pressure gradient may also substantially increase winter wind velocities./

Air

Air quality in Southeast Alaska is generally very good. There are relatively few major emissions sources in the region, and pollutants are rapidly dispersed by winds and removed by precipitation. Air quality in the state is regulated by the Alaska Department of Environmental Conservation.

Fire

The incidence of forest fires in the Tracy Arm-Fords Terror Wilderness is extremely low. Abundant rainfall, infrequency of electrical storms, and the caution exhibited by the recreating public account for the reduced wildfire potential. Recorded wildfires have been small and human caused from improperly extinguished campfires.

Minerals

The mineral character of the area is well documented. As early as 1869 Mix Sylva and other disappointed miners from the Cassiar gold district, on the Canadian side of the international boundary, traveled northward from Fort Wrangell and discovered placer deposits at Windham Bay and on Powers Creek at Holkham Bay. It is reported that \$40,000 in gold was extracted from these placers in 1870-71 and that this represents the first considerable quantity of gold produced from Alaska.

Although there has been exploration occurring throughout the area, the most intense and best documented activities have been the Powers Creek Gold Mine near the Sundum Glacier and the Tracy prospect 12 miles north of Harbor Island on the west side of Tracy Arm.

The Tracy prospect, called the Neglected Prize, was first claimed by Alex Butterball in 1916. They were reclaimed by Eugene Owens in 1923. The early workings, (still visible) consisted of shallow open cuts and short shaft. Since the early days the prospect has changed hands several times and additional cuts were made and the shaft was enlarged.

Both the U.S. Bureau of Mines and the U.S. Geological Survey have investigated and surveyed the area principally during the 1940's, 50's and 60's.

Current Status of Claims: The Tracy Arm area was initially withdrawn from entry under the Mining and Mineral Leasing Laws in December of 1978 by the Secretary of Agriculture under the authority of the Forest Land Policy and Management Act of 1976. The area remained withdrawn until ANILCA was passed in December of 1980 designating the area Wilderness. After the passage of ANILCA the area became open to mineral entry under provisions of the Wilderness Act until midnight December 31, 1983.

Within the project area there are currently 58 mining claims on file with the Bureau of Land Management. The claims are held by both individuals and corporations. In 1988, the owners of the Tracy claims, nine miles north of Harbor Island, applied to the Bureau of Land Management to patent three of their claims. The mineral survey was completed in the summer of 1989. If the mineral examination determines the claims are valid, the subsurface estate could be conveyed to the owners.

Recent exploration in the area (last 20 years) have involved geologic mapping, seismic work, claimstaking, trenching, and diamond drilling. Plans of Operations

were filed by Placid Oil, Resource Associates, Sundum Development Corporation, and Mapco for such work. Activities on the other claims are not known.

Evidence of these exploration activities are limited to drill pads, drill core, equipment storage structures and helipads. These items have minimal effect on the area as they are virtually invisible to the majority of the users of the area that confine their activities to salt water. Mill site claims have been recorded in lower Powers Creek and on Harbor Island. However little or no activity has taken place in these areas.

A few of the large exploration companies that were recently exploring the area have quit-claimed or transferred their interest to the original claim owners. Due to this, it is not likely that development of deposits in the area will be proposed in the near future. However, some development in the future may occur providing some claims are found valid and mineral prices increase.

Water Quality

The wilderness area has a past history of mineral activity, dispersed recreation, logging and sparse human occupation. With the exception of a few small streams near recent mineral activity it is generally thought that the scope of past activities did not have the potential to significantly alter or cause long lasting water quality degradation. Hence, overall the water quality is expected to be high.

In most cases, the water use classification to be managing for is, as defined by Alaska State Water Quality Standards, "Growth and Propagation of Fish, Shellfish, Other Aquatic Life and Wildlife Including Waterfowl and Furbearers", hereinafter referred to as Alaska Department of Environmental Conservation Standard C.

Most streams in the project area have very high gradients beginning at alpine to tide water. Cascading waterfalls emptying directly into salt water are common and contribute significantly to the scenic values of the area.

Streams within the project area are of both glacial and non-glacial origin. Sediment laden glacial streams and tidewater glaciers give the salt water in the area a milky appearance.

Soils

Shallow mineral soils (less than four feet thick) on steep V-notch dissected sideslopes are common in the area. Small areas of organic soils (muskegs) occur on infrequent benches and at sub-alpine elevations. Of concern are soils and vegetation occurring on recently deglaciated areas. These soils are very fragile where slight disturbance can eliminate or significantly set back the vegetative succession.

Lands

Status - All lands located within the Tracy Arm-Fords Terror Wilderness are administered by the Juneau Ranger District, Chatham Area, except for a single inholding. Under section 14(h)(1) of the Alaska Native Claims Settlement Act of 1971 (ANILCA). Regional Native Corporations were granted the right to select lands from the National Forest which are of significant cultural and/or historic value. Sealaska Corporation selected a 5.9 acre site at Powers Creek, four miles east of Harbor Island. The land received interim conveyance on 9/28/84.

Non-recreation SUP's and Temporary Facilities - There are no temporary camps or other non-recreational special use permits within the Wilderness.

BIOLOGICAL ENVIRONMENT
Fisheries

The wilderness area contains approximately 36 streams of which only four have been observed to contain anadromous fish. Most of the streams have steep gradients starting at tide level. Some have cascading waterfalls which plunge directly into salt water.

North Arm Port Houghton stream and lake, the highest fish population system in the wilderness area, contains pink, chum, and coho salmon, steelhead and either Kokanee or sockeye salmon in the lake. In 1980 this stream had a pink salmon escapement of just under 16,000. In contrast to North Arm stream, the other three streams containing anadromous fish have very small runs. In 1980 the highest of the three streams had a pink salmon escapement of 600.

King and Tanner crabs and shrimp are found in Tracy and Endicott Arms, but only a limited number of crab fishermen use the area.

Three lakes have been identified as having potential for enhancement projects. Adale Lake (ADF&G #111-21-53) is considered a potential project but will need a barrier removed because the outlet runs underground for approximately 100 meters making smolt outmigration impossible. North Arm Lake in Port Houghton (ADF&G #110-34-03) as stated earlier, contains steelhead, sockeye, coho, and Dolly Varden char. The sockeye have been determined to be anadromous in this system. Further study is needed to determine what type of enhancement would best suit the needs of the fisheries, and the capability of the lake. Similarly, Icefall Lake on Tracy Arm needs further study.

Wildlife

Wildlife species present in this wilderness are representative of those common to mainland Southeast Alaska. Wildlife species generally of greatest interest include brown and black bear, mountain goats, bald eagles, and harbor seals. These species are regularly viewed within the area. Other marine mammals such as killer whales and humpback whales are occasionally seen in the Holkham Bay area. These wildlife populations appear to be stable, and the large seasonal concentrations of harbor seals are the only notable wildlife value. Humpback whales are an endangered species and are known to frequent Holkham Bay. No other threatened or endangered animals are known to occur in the wilderness.

Flora

The flora of this wilderness represents various communities common to mainland Southeast Alaska. Plant communities range from tidal flats to alpine peaks and are in many areas recently deglaciated. This fact lends many sites in the wilderness suitable for colonization by plants which require early succession sites. Some of these plants are uncommon to most Southeast Alaska communities. The area also houses plant communities of various ages and stages of development due to its glacial history. No threatened, endangered, or sensitive plant species are known to occur within the wilderness.

SOCIAL ENVIRONMENT

Wilderness

Tracy Arm is renowned for its sheer rock walls rising directly out of salt water. There are numerous high waterfalls in the Wilderness which drop straight down the cliffs. Two tidewater glaciers are located in close proximity and actively calve, creating icebergs that float out into Stephens Passage. Fords Terror is another glacially carved area that is extremely steep and narrow. Tidal action complete with standing waves in this area is particularly pronounced.

Recreation

Public Facilities/Trails: There are no public facilities or trails in the wilderness.

The major recreational use of the wilderness area is by large commercial cruise ships, and the smaller tour boats and permitted outfitter/guides mainly from the Juneau area, that visit Tracy and Endicott Arms each summer. Depending on weather and ice conditions about 60 to 80 cruise ships will enter Tracy Arm in a year. In 1971, approximately 150 cruise ship visits occurred for a record season. Potentially about 40,000 people may visit Tracy Arm area by tour vessel in a year.

Table Number XX

RECREATION SPECIAL USES. POST ANILCA VISITOR SERVICES:

Location	Special Use	Holder
Tracy/Endicott	Outfitter/Guide	Alaska Discovery
Tracy/Endicott	Outfitter/Guide	Special Expeditions
Tracy/Endicott	Outfitter/Guide	Marine Adventures Sailing Tours
Tracy/Endicott	Outfitter/Guide	Harold Robinson

Dispersed Use. Dispersed recreational opportunities are generally associated with salt water related activities but some upland hunting, fishing, camping, and hiking is known to exist. There are a few lakes in the alpine area, which are accessed by goat hunters using float planes. Photography and viewing of wildlife and landscape is the largest recreation activity to take place in the wilderness area.

Some hiking and camping takes place at Powers Creek on the forelands at Holkham Bay, at the mouth of Fords Terror, in the creek valleys along Tracy Arm, and on the small island near Sawyer Glacier. Although most visitors to the area rarely leave the crafts they arrive on, both guided and non-guided camping/boating trips also occur, often utilizing the few good camping locations near saltwater. There are no cabins or maintained trails within the wilderness area. Salt water fishing mainly occurs in Holkham Bay and most hunting opportunities exist around the area's goat populations. Kayaking has been reported as increasing in Endicott and Tracy Arm. A local tour boat operator has noted an increased demand from kayakers for transportation to and from the area.

Recreation Opportunity Spectrum (ROS): The Recreation Opportunity Spectrum (ROS) inventory system provides a framework to manage land and water resources by providing an understanding of the dynamic nature of the recreation resource and the complexity of it's management. The four recreation classes identified provide a range of different physical and social circumstances which lead to different recreation activities and experiences. The "Primitive" classes represent activities and experiences. The inaccessible opportunities, while the "Semi-Primitive (Motorized)" represents the most developed and accessible experience available in the Tracy Arm-Fords Terror Wilderness.

Recreation Opportunity Spectrum Acres (See Appendix I for definition of ROS classes)

ROS Class	Acres	% of Total Acres
Primitive I (PI)	492,800	76
Primitive II (PII)	122,100	19
Semi-Primitive Non-Motorized (SPNM)	23,300	4
Semi-Primitive Motorized (SPM)	11,960	1

The majority of the acres is in the Primitiva I (PI) class. These lands are remote, untouched, and visited very rarely. The backcountry lakes which see a small amount of use by goathunters each season are shown as Primitive II (PII). The actual number of fly-ins is unknown. Tracy Arm is the most visually attractive portion of the wilderness accessible by waterway and attracts the largest number of recreational boaters and tour/cruise ships. Holkham Bay to Sanford Cove and north to No Name Cove has some evidence of past occupancy, a few structures, some mining activity and a relatively large amount of commercial and recreational boat use. The shoreline zone along these areas has been classed as SPM to reflect these conditions. The Sundum Glacier area has been classed SPNM because of heavy boat use in Holkham Bay, some mining activity, and the attraction of the Glacier.

Endicott Arm south of Sanford Cove receives less use by the large tour/cruise ships, and recreational boaters although shoreline related activities may occur in some spots. This area has been classified as SPNM. Fords Terror is shown as PII beyond the tidal surge zone due to the difficulty of navigating into this fiord.

Access: Access to this Wilderness is primarily by plane or boat. The extremely steep terrain prohibits overland travel.

Pre-ANILCA Helicopter Use: Scoping with two Juneau-based helicopter companies indicated pre-ANILCA some use inside of the wilderness boundary. Helicopter use that may qualify under the "grandfather" provisions of Section 4(d) of the wilderness Act must have been established prior to 1980, "on a more or less regular basis," and not be for administrative purposes (i.e. ADF&G, USFS, USGS, etc.). This use is in the process of being verified.

ERA Helicopters use is as follows:

Table XX

ERA REPORTED HELICOPTER USE

LOCATION	PURPOSE
Unnamad island near head of Tracy Arm	professional motion picture work, commercial photography
southern portion of Endicott Arm	" "
Harbor Island	commercial photography, mineral exploration

TEMSCO's use is as follows:

Table XX
TEMSCO'S REPORTED HELICOPTER USE

LOCATION	PURPOSE	AMOUNT OF USE
Upper Tracy Arm including unnamed island	Sightseeing, filming, icefield access	5-25 trips/year
Lower Tracy Arm	prospecting	1-5 trips/year
Endicott Arm	recreation, wildlife observation, filming, icefield access, sightseeing.	1-5 trips/year
Ford's Terror	sightseeing, recreation	1-5 trips/year
Sumdum Mt./beach	prospecting, recreation	1-5 trips/year

Recreation Use: The use of the area in terms of RVD's is as follows:
1985-33,000 RVD's 1986-35,000 RVD's 1987-36,500 RVD's 1988-41,000 RVD'S

Visual Resources

This visual character type is coast range. In comparison to other character types in southeast Alaska, scale of landforms are generally large, massive and give an impression of great bulk. Uplands are generally 5000 to 7000 feet in elevation dissected by deep steep-walled U-shaped valleys. Mountain ridges are generally rounded summits but are surmounted at times by aretes and horns rising 8000 to 9000 feet. The large saltwater fiords protruding into this character type are sometimes extremely steep-sided, affording great visual relief because of the abrupt differences in elevation.

This character type exhibits a great variety of geological features. Cliffs, rock escarpments, smooth glacially scoured faces and at higher elevations jagged peaks, spires and cirques are evident. Shorelines vary from rocky bluffs to sand beaches.

Virtually the entire wilderness is in Existing Visual Condition 1 where the land appears to be untouched by human activity.

Subsistence

Most hunting and fishing in this area is legally classified as sport or personal use.

Cultural Resources

Documentation from previous cultural resource investigations and extensive literature review indicate that seven areas of identifiable cultural resources exist within the present boundaries of the Tracy Arm-Ford's Terror Wilderness Area. These resources include: the Powers Creek Village ANSCA 14(h)(1) site, a historic native village; the Round Inlet Fort, historic fox farming industries at Powers Creek, Harbor Island and Round Island, Sumdum Island and Bushy Island

Scientific Values

This is an excellent area to study successional stages of plant communities and to observe baseline data to compare to areas with modification.



WARREN ISLAND
WILDERNESS

ADMINISTRATIVE FACTORS

Location

This Wilderness is made up of one island just off the west coast of Prince-of-Wales Is. and about 40 miles by water northwest of Craig, Ak. This area is located on the Thorne Bay Ranger District. Legal descriptions are on file at the Thorne Bay Ranger District office in Thorne Bay.

This Wilderness includes one VCU- 565.

Administrative
Facilities

There are no administrative facilities in this Wilderness. This Wilderness is administered from the Thorne Bay District Ranger office in Thorne Bay, Alaska.

PHYSICAL ENVIRONMENT

Geography

This Wilderness is made up of one oval shaped island with steep rugged slopes rising up to over 2200 feet. The terrain is broken by a series of prominent drainages. A couple of these streams flow into prominent bays that protrude into an otherwise fairly uniform coastline.

Climate

Maritime weather dominates this island Wilderness as it does most of Southeast Alaska. Normal temperatures range from the 40's to mid-60's F. in summer, and from the high teens to low 40's F. in winter.

Storms and moderate to heavy precipitation occur throughout the year, although storms are most frequent and precipitation is heaviest from September through November. In winter, because of the island's location on the outer coast, snowfall accumulations are usually not very heavy.

Surface winds are moderate to strong throughout Southeast Alaska. Prevailing winds generally blow from the south or southeast, except where local topography influences wind direction.

Air

Air quality in this area is very good. There are no sources of pollution anywhere near this Wilderness.

Fire

The incidence of forest fires in the Coronation Island Wilderness is extremely low. Summer rainfall and the relative infrequency of summer electrical storms are major factors in the low wildfire potential. Wildfires are generally man-caused and due to escaped campfires.

Minerals

Due to the remoteness of the area and the rugged topography, little mineral exploration has occurred. There are no mining claims in this Wilderness.

Water Quality

There are no major stream systems on the island and only a few short individual stream channels, all with small, steep watersheds. The water quality in these streams are expected to be good. No development activity has taken place in this area in the recent past that would affect water quality.

Soils

(No report on specific soils of Warren Island is available)

Lands

Status - All of this island is National Forest land. There is a Native Allotment application on Warren Island within the N 1/2, Section 23, T69S, R75E. This is AA7539, Parcel B. The application has been denied by BLM and the case file has been closed.

Non-Commercial SUP's - There are no special use permits in effect in this area at this time.

Temporary Facilities/Camps - There were no documented or known temporary camps for the taking of fish and wildlife existing before 1980.

BIOLOGICAL ENVIRONMENT

Fisheries

Freshwater fisheries habitat on Warren Island is limited. Two catalogued anadromous streams have been identified. Each of these streams has small, steep watersheds and appear to have only limited habitat for anadromous fisheries. Several other streams on Warren Island may support additional populations of anadromous and resident fish, but this habitat has not yet been assessed.

The only fish species documented within the study area are the pink and coho salmon found in the three catalogued fish streams (Alaska Department of Fish and Game, 1982). These streams, as well as several of the unexplored streams on Warren Island, may also contain populations of Dolly Varden char, cutthroat trout, and chum salmon, but this has not been documented. No threatened or endangered fish species have been found in the study area (USDA Forest Service, 1983).

Because of the limited amount of habitat available and the limited access, sport fishing within the study area is minimal. There is no documented subsistence fishing use within the study area.

Abalone, clams, mussels, and other shellfish are found in the intertidal zones adjacent to the study area. Populations of these species have not been documented. There is probably some personal use of the intertidal shellfish, especially abalone, but this use appears to be minimal.

Wildlife

The islands within the study area support a wide variety of birds, land mammals, and sea mammals typical to Southeast Alaska.

The Peal's subspecies of Peregrine falcons has been sighted on Warren Island.

Sea mammals present include harbor seals, sea lions, sea otters, and whales. Harbor seals are present throughout this area.

Population levels for Sitka black-tailed deer, black bear, wolf, mink, marten and land otter have not been documented on Warren Island.

Sport hunting pressure on Warren Island is low due to lack of access. There is no documented subsistence hunting in these areas.

No known threatened or endangered wildlife species occur within the project area (Metzger, 1983).

Vegetation

The vegetation of the islands is typical of the outer coastal islands in the Alexander Archipelago: Sitka spruce, western hemlock, western redcedar and Alaska yellow-cedar with their associate understory species.

There are no known threatened or endangered vegetation species nor are any expected to be found (Helmuth and Fischer, 1983).

SOCIAL ENVIRONMENT

Wilderness

Warren Island has moderately high wilderness values based on the following four criteria.

- a. **Natural integrity** is moderately high due to the fact that this island stands by itself and is surrounded for the most part by large areas of saltwater. Just a few miles to the east is the heavily harvested areas of Kosciusko Island.
- b. **Apparent naturalness** is high due to the fact that the landscape has remained unaltered by human activity.
- c. The **opportunity for solitude** is moderately high due to the remoteness of the island and the difficulty of access. However large fishing fleets frequent nearby areas and boat traffic around Cape Pole and Edna Bay can often be seen.
- d. The **opportunity of primitive recreation** is good due to the solitude one would experience and the scenic and recreation attractions of the area.

Recreation

Public Facilities

There are no existing developed recreation facilities in the area.

Trails

There are no developed trails in the area

Commercial:

Outfitter/Guides - There are no known commercial services being offered at this time to this area.

Pre-ANILCA Visitor Services - There were no documented or known visitor services existing before 1980.

Dispersed Use

Warren Island is more accessible than Coronation Island, but less so than the Maurelle Islands.

The island is five miles from the small community of Cape Pole and receives occasional use by visitors from that community. Visitors in small boats use Warren and False Cove for beachcombing, but such use is restricted due to the surf. Occasional use by small boaters from Edna Bay (12 miles) and Port Alice (13 miles) occurs also.

Camping and hiking rarely take place on the island due to its relative inaccessibility, considering the availability of such opportunities on neighboring developed islands.

Warren Island provides a variety of wilderness recreation values such as opportunities for solitude, testing wilderness skills, exploring, and studying nature in an unmodified environment. Features include a large sandy beach; steep, mountainous terrain; open, rocky terrain; and three small lakes.

There is potential for a trail, at an appropriately low development level, which would tie the east side to the west side of the island. Some of the features along such a route include:

1. Warren Cove - a large sand beach with an excellent camping area behind it. Getting to shore is difficult due to surf.
2. False Cove - a smaller, rockier cove north of Warren Cove. Also has good camping potential along the shore.
3. Warren Peak - the highest peak on the island, 2320 feet. Excellent views, with alpine vegetation and exposed rock. There is a lake one mile by trail below the peak which provides a camping location.
4. Northwest side - is open with exposed rock, muskeg and scrub vegetation. Two lakes provide camping sites. Slopes are generally moderate, but the ground is fissured in many of the rocky areas.
5. Northwest anchorage - two small bights facing north provide protection. One of the bights is a stream outlet and the other contains a small beach for shore access.

Recreation Opportunity Spectrum

Because of the lack of any development on this island and its distance from any populated areas and its exposure to the open Pacific Ocean, all this 11,300 acres of this area is inventoried as Primitive I. The GIS recreation data base displays a more detailed inventory and map of Recreation Opportunity Spectrum classes and of key recreation areas and sites.

Access

Access to this area is by aircraft and boat. In good weather the eastern shores of the island can be accessed by open whalers or skiffs from Prince-of-Wales. The southern and western coast of the island is exposed to the open ocean.

Pre-ANILCA Helicopter Landing Sites - There are no known pre-ANILCA helicopter landing sites.

Recreation Use

It is estimated that recreation use on Warren Island has averaged no more than 200 recreation visitor days over the last five years. All of this has been dispersed recreation use.

Cultural Resources

Reported sites on Warren Island include the following: a petroglyph and village site located on the northeast shore of Warren Island; a village site on the east coast of Warren Island (Sealaska 1975); a petroglyph on Warren Island (ibid.); and an Indian Allotment Claim of a cabin, smokehouse, etc., at the head of Warren Cove, #AA-7539, which was denied (5450 Files).

This information indicates that the outer island wilderness area was utilized traditionally on at least a seasonal basis. In addition to the activities mentioned above, the people could have fished for bottom fish and possibly for salmon (though the preferred method for catching the latter was to entrap them in weirs; and no major salmon streams or weirs are reported on any of these islands); hunted sea-otter and trapped fur bearers; hunted sea lions and seals; gathered seaweed (and one of the preferred kinds grows only where there is constant tidal surge); gathered abalone and gumboots; picked berries and gathered other edible flora; and built forts for defense against enemy groups. After contact with Europeans, people may well have developed garden spots near their traditional use areas.

Warren Island contains no sites identified under Section 14(h)(1) of the Alaska Native Claims Settlement Act.

An archeological survey conducted from June 20-21, 1983, by the Forest Service in the outer islands Wilderness areas did not include Warren Island, because of rough weather.

Visual Resource

No formal visual resource inventory of this Wilderness area has been completed, and only very limited informal surveys have been done.

This area is part of the Kupreanof Lowlands character type which is characterized by generally low, rolling terrain, elevation seldom greater than 1500 feet, and numerous island groups, and intricate waterways. This island stands by itself rather than being part of an intricate group of islands and waterways. However the island is characterized by steep rugged slopes rising to elevations over 2200 feet. They are dissected by a series of prominent drainages which add appreciably to the landscape diversity of this island. Much of the island would be inventoried as a Variety Class A (having distinctive landscape diversity relative to the character type.) Other prominent scenic features are the broad beaches that ring the head of Warren and False Coves on the eastern side of the island.

Because this is a classified Wilderness, the inventoried visual quality objective for the entire area is Preservation which generally permits only small scale, low visual impact recreation facilities.

Subsistence

There is no documented subsistence use of fisheries and wildlife resources in the area.

Scientific Values

The Peale's Peregrine Falcon is a rare species which is found on this island. Research into this bird's numbers, habitat requirements and other aspects of its natural history may be of value. Research into coastal geomorphology and the history of different shoreline levels may also be of interest.

(INSERT MAP OF WARREN ISLAND WILDERNESS HERE)

WEST CHICHAGOF-YAKOBI
WILDERNESS

ADMINISTRATIVE FACTORS

Location West Chichagof-Yakobi Wilderness encompasses the Western sides of Chichagof and Yakobi Islands from Kakul Narrows to Soapstone Point. The Wilderness contains 264,747 acres and includes VCU's 263 through 278. The Wilderness is located on the Hoonah and Sitka Ranger Districts, Chatham Area, Tongass National Forest, in Southeast Alaska. A legal description of this area is on file at Forest Service offices in Sitka, Hoonah, and Juneau, Alaska.

Administrative Facilities The West Chichagof-Yakobi Wilderness is managed by two ranger districts: the Sitka and Hoonah Ranger Districts with offices in each community. There are no other administrative facilities in the Wilderness.

Geography The West Chichagof-Yakobi Wilderness supports in relative abundance nearly all major land types and associated ecosystems characteristic of southeast Alaska, some of which are uncommon to the region as a whole. Perhaps the most dramatic of these regimes is the Wilderness' 65-mile-long stretch of rugged, Pacific coast-line extending from Salisbury Sound to Cape Bingham. Behind the stout headlands, barrier islands, rocks and reefs of the Wilderness' outer coast lie the quiet waters of West Chichagof's inside passage honeycombed with bays, inlets and lagoons. Rising abruptly from the ocean is the mountainous backbone of the Wilderness. Peaks rise to 3,600 feet, often from water's edge. As with nearly all of the Alexander Archipelago, Continental and alpine glaciation has played the major role in shaping the relief of the Wilderness, resulting in a mountainous coastal zone characterized by drowned glacial valleys (fjords), aretes, cirques and lakes. Most of the area's northern landforms have been heavily scoured, leaving only a thin mantle of glacial till plastered on upland slopes. Vast lowland areas have been scoured to bedrock. Shortly after deglaciation (about 9,000 years ago), a series of volcanic eruptions on Kruzof Island to the south deposited ash in varying depths over the entire area. Deposition was greatest in the south, with rather light accumulations north of Portlock Harbor. Today ash is absent on most level landforms to elevations of 30 feet or so above sea level pointing to continued isostatic rebound.

Climate Maritime weather dominates Southeast Alaska. Normal temperatures range from the 40's to mid-60's F. in summer, and from the high teens to low 40's F. in winter. In summer, cooler temperatures occur on or near the outer coasts while warmer temperatures prevail farther inland. In winter, the reverse is true. Extreme temperatures occur in both winter and summer when air masses from Canada override the coastal mountains, bringing clear skies and continental air to the archipelago.

Storms and moderate-to-heavy precipitation occur throughout the year, although storms are most frequent and precipitation is heaviest from September through November. In winter, snow falls frequently throughout the region and accumulations of 60 to 100 inches or more are not uncommon. At higher elevations more than 200 inches of snow may fall and accumulate each year.

Surface winds are moderate to strong throughout Southeast Alaska. Prevailing winds generally blow from the south or southeast, except where local topography influences wind direction. Certain conditions of temperature and pressure gradient may also substantially increase winter wind velocities.

Air

Air quality in Southeast Alaska is generally very good. The region contains no designated non-attainment areas for air quality. There are relatively few major emission sources in the region, and pollutants are rapidly dispersed by winds and removed by precipitation. Air quality in the state is regulated by the Alaska Department of Environmental Conservation.

Fire

The incidence of forest fire on Chichagof/Yakobi Islands is extremely low, although evidence of old burns exists. Summer rainfall and the relative infrequency of summer electrical storms are major factors in reducing wildfire potential. Wildfires are generally man-caused and due to escaped campfires.

Minerals/Geology

The general geology of the West Chichagof-Yakobi Wilderness consists mainly of low-grade metamorphic rock such as slate, schist, and phyllite; and Tertiary intrusive rocks, predominately diorite, granodiorite, and norite. Massive limestone-marble deposits also occur sporadically throughout the Wilderness.

Geothermal resource potential within this Wilderness appears to be limited to White Sulphur Springs, on Chichagof Island's west coast. Three springs, with an estimated flow of 30 gallons per minute, occur at the site. The average water temperature of these springs is 111 degrees Fahrenheit.

Gold, silver, nickel, copper, molybdenum, tungsten, and andalusite have been located within the Wilderness, mainly near areas of current mining activity. Deposits of nickel-copper sulfides are located at Bohemia Basin on Yakobi Island and at Mirror Harbor of the west coast of Chichagof Island.

Gold and silver, primarily lode deposits, occur within a mineralized rock belt that runs along the west coast of Chichagof Island and includes Yakobi Island as well. Nearly a million ounces of silver and gold have been mined from this belt, all if it before 1945. Gold and silver price deregulation and Wilderness Act provisions closing National Forest Wilderness to exploration for the purpose of establishing further claims at the beginning of 1984 caused an increase in mineral exploration within the Wilderness. Activity is occurring in Bohemia Basin on Yakobi Island, and at Mirror Harbor, Klag Bay-Kimsham Cove, and Pinta Bay on the west coast of Chichagof Island. Eight mining claimants hold about 260 unpatented mining claims within these areas.

As of January 1, 1984, according to provisions of the 1964 Wilderness Act, Wilderness lands are withdrawn from location of new mining claims, subject to valid existing rights. To date, there are no claims within this Wilderness with documented valid existing rights. Validity exams are being conducted on claims as notices of Intent or Plans of Operation are received. As this process proceeds, the number of claims is expected to decrease while activity on valid claims and patented land is expected to increase.

Water Quality

The tremendous volume of water that falls as precipitation across Southeast Alaska is difficult for most people to comprehend; one inch of rainfall distributed over one square mile amounts to 17.4 million gallons of water. Southeast Alaska receives an average of about 100 inches of precipitation annually. About 35 percent of this falls as snow.

In spite of the abundant amount of precipitation in this region, groundwater is generally scarce. Extensive areas of shallow or poorly drained soils and the presence of bedrock close to the soil surface inhibit deep aquifer formation. The majority of the precipitation is rapidly returned to the ocean via the large number of streams present throughout the area.

Streamflows vary greatly, even over short periods of time. Daily flows in all streams are lowest from December through March. During the winter and early spring months, precipitation accumulates as snow in the high basins. When temperatures rise in the late spring, snowmelt causes runoff to increase rapidly. High rates of flow usually occur during July, August, and September. By mid-November flows begin to recede to prevailing winter lows.

Soils

In Southeast Alaska high precipitation and cool temperatures slow decomposition of organic matter and result in soils covered by a thick, constantly moist, organic duff layer, high in nutrient content. Below this organic layer, soil fertility is commonly low.

Organic soils in Southeast Alaska include alpine organic soils, well-drained organic soils derived from forest litter over bedrock or gravel, and wet organic soils derived from various vegetative materials. The wet organic soils below the alpine can generally be placed into four groups: (1) poorly decomposed moss peat (Kogish Series); (2) moderately decomposed sedge peats (Kina Series); (3) poorly decomposed sedge peats (Staney Series); and (4) mucks over peats (Maybeso and Kaikli Series).

Of these four major kinds of wet organic soils, only those of the last group (Maybeso and Kaikli) support forest vegetation; they represent about 10 percent of the landscape. The others are muskeg, that is, the vegetation on them is dominated by sphagnum mosses or sedges or both, with low shrubs and forbs and only scattered trees. They represent about 14 percent of Southeast Alaska's landscape.

The wet organic soils throughout Southeast Alaska comprise about 24 percent of the landscape. Estimates derived from timber inventory of Southeast Alaska indicate that about 36.2 percent of the area is included in alpine meadows, brushfields, rock, snow, and icefields. The remaining 39.8 percent is comprised of soils derived from glacial till and residual bedrock. This includes soil types which support conifers, alder brush, and natural grassland.

The organic mat which accumulates on the surface of these glacial tills and residual soils is a storehouse of plant nutrients. the depth of tree rooting is confined primarily to this organic mat and the upper 12 inches of mineral soil.

Land Status

Private Recreation Cabins and Homesites. Within the West Chichagof-Yakobi Wilderness, there are two special use permits for recreation cabins, one at Klag Bay and another at Lake Anna. Two non-recreation residences located on the south end of Yakobi Island are also under special use permit. These four human occupancy sites were in place in 1980.

A private temporary tent platform exists at Goulding Harbor. The decision to allow temporary tent platforms in West Chichagof/Yakobi is under appeal and a stay has been placed on the Special Use Permit.

Research Station. The Alaska Department of Fish and Game has a special use permit for a research camp with a weir for coho salmon escapement counts at the outlet to Ford Arm Lake. This camp was first operated in 1982, and did not exist at the time of Wilderness establishment. All traces of the camp will be removed upon completion of the project.

Fish Buying Scows. Fish buying scows are required to obtain a special use permit from the Forest Service only when they are engaged in some activity above mean high tide (such as using a pipeline to obtain fresh water, or the attachment of a shore-tie). In 1982, there were six fish-buying scows within the Wilderness. Two were located in Deer Harbor and four others were at Hoktaheen Cove; both sites are located on Yakobi Island. These scows were not under permit prior to 1982, but probably existed at the time of ANILCA passage; constituting six human occupancy sites within the Wilderness. In 1989 there were five scow permits, three in Hoktaheen and two in Deer Harbor.

Native Historic Sites. Under provisions of the Alaska Native Claims Settlement Act of 1971 (ANCSA), Native corporations are allowed to select Forest lands of significant historical or cultural value. These sites are to be maintained and preserved solely as cemetery sites and historic places by the regional corporation and cannot be used for mining, mineral activity, commercial or other uses which are incompatible with the purpose for which the land was selected. The United States government will have right of first refusal for purchase in the event the native corporation elects to dispose of lands included in these selections. Five claims have been filed within the Wilderness, of which three have received interim conveyance. These sites were selected by Sealaska Corporation and are located in Klag Bay, Surge Bay, and Khaz Peninsula. All have been conveyed. Decisions on the two remaining sites in Ogden Passage and Klag Bay are pending.

1906 Native Allotment Claims. There is one claim within the Wilderness under provisions of the 1906 act, which is active. It is located in Surge Bay, Yakobi Island.

State Land Selections. The 1958 Alaska Statehood Act allowed the State to select National Forest lands for community expansion and recreation. A 1112 acre parcel at Cape Bingham which is partially in the Wilderness received tentative approval in 1984. Two other State selections at Lake Anna (545 acres) and Goulding Harbor (862 acres) were disapproved by the Forest Service and the state relinquished them on August 19, 1987.

Federal Power Withdrawals. Potential energy production sites have been identified on all Federal lands in anticipation of future energy needs. These areas have been withdrawn under a power site classification. A Federal power withdrawal within the Wilderness is located at Suloia Lake.

Private Land. There are 745 acres of private land within the Wilderness. Most of this land is in a block of 18 parcels in the Kimsham Cove - Klag Bay area which were patented under mining laws in the 1920's and 30's. Other tracts of private land includes the north half of Radio Island and part of a patented mining claim near Bohemia Basin that is inside the wilderness boundary. The Federal Government has no control and little influence over this land. The Klag Bay land is being explored by several companies who hold lease options for new mining ventures. Active mining operations which could involve long-term occupation by work crews and increased activity in and around Klag Bay may begin

soon. Other potential uses of these private holdings such as sale for private residences or resort development could cause profound impacts on the Wilderness character of the area.

BIOLOGICAL ENVIRONMENT

Fisheries

Coho, sockeye, pink, and chum salmon, cutthroat, steelhead, rainbow trout, and Dolly Varden char occur in some of the lakes and streams. The most notable shellfish and marine fish species are Dungenese and tanner crab, shrimp, herring, and halibut. Sport, commercial, and estuarine fishery values are rated high overall. Most fishing activities are commercial although some of the lakes support a good trout and char sport fishery and are popular with local residents. The taking of fish for subsistence purposes occurs seasonally at several locations throughout the Wilderness.

Estimates based on aerial photo interpretation indicate that there are approximately 108 miles of anadromous fish streams within the Wilderness, and approximately 1,530 acres of anadromous fish lakes. Extensive field work would need to be conducted to get a truly accurate picture of both resident and anadromous fish habitat.

Population levels of fish and wildlife in the Wilderness Area remain high and generally unaffected by man-caused habitat alterations or disturbances except in localized areas of human occupancy or high use. While no population estimates or habitat measurements have been made for this analysis, fish and wildlife population levels can generally be described as having been at or near carrying capacity in 1980, and continue to be today.

Fish stocking records indicate that several species of fish have been stocked in West Chichagof-Yakobi Wilderness lakes during the past 50 years. Available information shows the following fish stocking activities for sport fishing purposes to have taken place:

Table XX

FISH STOCKING IN THE WEST CHICHAGOF/YACOBI ISLAND WILDERNESS

Year	Lake	Fish Species
1938	Elfendahl	Rainbow
1938	Goulding #2	Rainbow
1938	Otter	Rainbow
1938	Goulding #3	Cutthroat
1965	Suloia	Rainbow
1985	Suloia	Rainbow

Rainbow stocke originated on South Baranof Island and Cutthroat from Lower Goulding Lake. An additional plantinge of Rainbow trout is planned in 1990 to augment the population in Suloia Lake.

Lakee and streams within the West Chichagof-Yakobi Wilderness have been investigated to varying degreee concerning their potential for fish habitat enhancement work. Projects involving rearing of coho salmon in barriered lakes and providing passage over stream blockagee for accessing additional spawning area have been considered at several sites.

Lake surveys for ascertaining the feasibility of rearing coho salmon were conducted in the following lakes in 1979:

Suloia Lake	Cunningham Lake
Goon Dip Lakes (5 lakes)	Morris Lake
Didrickson Lake	Smiley Lake
Upper Didrickson Lake	Elfendahl Lake

Additional surveys on these lakes were conducted after 1979 leading up to the stocking of Elfendahl Lake in 1983. A problem with fish parasites indigenous to the lake has raised questions regarding the long term potential of these lakes for the lake stocking program. NSRAA concluded studies in 1985 and all equipment was removed.

Barrier falls with potential for modification to allow fish passage have been identified on six streams within the Wilderness. They include:

- Black River
- Waterfall Cove
- Lake Anna
- Goon Dip River
- Flat Cove Creek
- Twin Falls Creek

Falls Creek and Suloia Outlet have had preliminary evaluations and will have no further evaluations for passage modification. A hatchery has been proposed at Rust Lake by Northern Southeast Aquaculture Association.

Wildlife

Brown bear, Sitka black-tailed deer, furbearers, land and shore birds, and bald eagles inhabit the area. Many species of waterfowl migrate along the coastline of the Wilderness with a few species nesting in the estuarine and stream course wetland areas. Major marine mammal and sea bird concentration areas occur on rocks and small islands on the west side of the Wilderness.

Vegetation

Chichagof and Yakobi are part of the cool, very moist rain forest that extends along the Pacific Coast from northern California to Cook Inlet. Chichagof and Yakobi are typical of the three large islands of northern southeast. Most of Chichagof/Yakobi's forest is old-growth.

Its forest is composed primarily of Western hemlock and Sitka spruce with a scattering of Yellow cedar and Mountain hemlock. Sitka alder is common along streams, beach fringes, and on soils recently disturbed soils.

No species of plants or animals which are presently listed by the Federal government or the State of Alaska as threatened or endangered are known to be found within the Wilderness.

SOCIAL ENVIRONMENT

Wilderness

The West Chichagof-Yakobi Wilderness has evolved through a broad range of conditions involving human use, development and occupancy. What was originally an area totally without humans' influence, West Chichagof became an area of seasonal habitation by local native peoples prior to the appearance of Russian and American influence in the region. The wilderness character of West Chichagof and Yakobi Islands remained virtually uncompromised up until the late 1890's when extensive mineral prospecting occurred throughout southeast Alaska. From this

point until the early 1950's the outer coast was characterized by small communities, and settlements associated with mining, fur farms, fishing, and support activities. Between 1950 and recent times, most of these activities had been discontinued and at the time that wilderness designation was being proposed much of the original wilderness character had returned.

Human use of West Chichagof-Yakobi and similar areas is presently on the increase. The emphasis on work on existing mineral claims and other commercial uses of public lands has caused renewed interest and activity on and adjacent to the Wilderness Area. In addition, an increase in recreation demand and general public mobility is bringing more visitors and visitor services each year.

Evidence of conflicts between user groups is becoming more evident and can be expected to increase if present trends continue. Mineral development, fisheries research and enhancement activities, commercially outfitted and guided recreation, self-guided recreation, and temporary subsistence camps are all potentially conflicting uses which could impact the wilderness resource.

The distance of West Chichagof-Yakobi Wilderness from population centers and its relative inaccessibility have allowed the area to retain its high wilderness values. The area supports a full range of life zones, from the estuarine to the alpine, which may be observed by the visitor as a diverse system of beach grasses, shrubs, muskeg, forest, meadow, and alpine tundra blended by transitional zones and interspersed with streams and lakes. An abundant old-growth rain forest of Sitka spruce and western hemlock covers much of the lower elevations. It is this combination of rugged mountains, dense rain forest, and the sea that gives the West Chichagof-Yakobi Wilderness its exciting landscape variety and high wilderness value.

Vast areas of the Wilderness are characterized by an essentially unmodified natural condition. Persons using the area can expect a high probability of experiencing isolation from the sights and sounds of humans, closeness to nature, tranquility, and self-reliance through the application of woods and outdoor skills in an environment that offers a high degree of challenge and risk.

Since about 1950, the wilderness character of West Chichagof-Yakobi has improved considerably. Previously established villages, residences, and other occupancies amounting to as many as several hundred residents during periods of most intensive activity tapered off during the 1950's and many sites were reclaimed by the Wilderness. The period 1960 to 1980, has undoubtedly seen the least human activity of any similar period since the late 1800's and possibly before. Those qualities of naturalness, isolation, beauty, and solitude which contribute to wilderness character were all abundant at the time of ANILCA passage.

Recreation

Forest Service Public Use Cabins. Within the West Chichagof-Yakobi Wilderness there are four public use cabins which are administered by the Forest Service through a reservation system. They are listed below by location and construction type.

Table XX

PUBLIC RECREATION CABINS VISITOR USE (VISITOR DAYS)

CABIN	1984	1985	1986	1987	1988
Suloia Lake (pre-fab cabin)	212	192	236	82	44
White Sulphur Hot Springs (pre-fab cabin)	952	968	1014	622	770
Goulding Lakes (A-frame)	434	375	336	361	314
Greentop Harbor (A-frame)	no data available				106

These cabins receive varied amounts of use during the summer season. White Sulphur (capacity 6) is one of the heaviest used cabins on the Sitka Ranger District and receives almost constant use throughout the summer. The adjacent hot tub building (capacity 4) also gets use besides that associated with the cabin. Goulding Lakes cabin (capacity 8) is used infrequently but still generates approximately 350 12-hour visitor days per year. These two cabins are relatively stable in their yearly occupancy rate, and their use is not expected to increase significantly in the near future. Suloia Lake (capacity 6) and Greentop Harbor (capacity 5) have historically received very little use. Use at both of these cabins is increasing, however, following the construction of a replacement cabin at Suloia and an apparent higher interest in the Greentop area. The extent of this expected increase is unknown at this time.

Hiking Trails. There are five established hiking trails within the Wilderness. They are:

Table XX

TRAILS

TRAIL NAME	TRAIL NUMBER	LENGTH	TRAIL DESIGN STANDARD
		(miles)	DIFFICULTY
Goulding Lakes	481	1.2	easiest
Didrickson	502	0.2	easiest
White Sulphur	560	1.0	easiest
Suloia Lake	575	1.1	more difficult
Dry Pass	672	3.3	more difficult

Most of these trails are primitive, with maintenance on a three year schedule. The trail difficulty rating is based on the following criteria:

Easiest:

- route is generally level with short uphill/downhill sections.
- excellent to good tread surface and clearance.
- absence of navigational difficulties and hazards.

More Difficult:

- route is level to steep with longer uphill/downhill sections.
- good to fair tread surface and clearance.
- short sections may have some navigational difficulties/hazards.

Most Difficult:

- route is generally steep with sustained uphill/downhill sections.
- poor to non-existent tread surface and clearance.
- longer sections involving some navigational difficulties/hazards.

There is also one existing trail which is unmaintained; Takanis River trail (3.2 miles). Other commonly used routes which could be classified as trails include popular outer shorelines used by beachcombers and inside water routes used by kayakers. The Hoonah Ranger District is planning to include potential trail development between the Greentop Cabin and Lisianski Strait in 1990. As these trails are identified they will be added to the list of Wilderness trails.

There is no data regarding the amount of use that these trails receive. Generally, the White Sulphur trail receives heavy use related to the use of the cabin, Suloia Lake and Goulding Lake trails get occasional use, and the remaining three maintained trails receive very limited use. These levels are not expected to change significantly in the near future.

Outfitter/Guides. There are three outfitter/guide operations presently under permit to operate within the West Chichagof-Yakobi Wilderness. They conduct guided kayaking and camping tours, and nature observation. They operate in Portlock Harbor, Klag Bay, Myriad Island, Goulding Harbor, Ogden Passage, and much of the remaining coast line of Chichagof Island.

Several other outfitter/guides are presently operating within the Wilderness as well. The Sitka and Hoonah Ranger Districts are in the process of getting these operators under permit.

Pre-ANILCA Visitor Services. There are two commercial visitor services that were operating in West Chichagof/Yakobi prior to the signing of ANILCA in 1980. They were Alaka Discovery, which operates kayak trips in Portlock Harbor, Klag Bay, Myriad Island, Goulding Harbor, Ogden Passage; and Southeast Management and Trading Company (SEMCO), which operated all along the coastline of West Chichagof/Yakobi, doing nature observation. These services are increasing and the demand for conducting outfitter/guide operations will likely continue to increase in the near future. The impact of these activities on the wilderness resource and other users is not considered to be significant at the present time and will continue to be monitored through the permitting process.

Dispersed Use. Reports from local air charter services indicate that there is a substantial amount of recreation-related use in the Wilderness during the summer months. The most popular use is associated with marine and freshwater sites in and adjacent to the Wilderness. Recreational fishing, sightseeing, camping, picnicking, hiking, hunting, and gathering forest products have increased in popularity during recent years. Kayaking, in particular, has become a major recreational pursuit and means of transportation of visitors to the Wilderness. Long-term increases in recreation will probably focus on the outer coast of West Chichagof and on Goulding and Suloia Lakes.

Recreation Opportunity Spectrum. A ROS supply inventory was prepared for the West Chichagof-Yakobi Wilderness and completed in June 1982. This ROS supply inventory places land into one of several categories, depending upon how it is being used and what facilities exist on it. Setting characteristics, experience opportunities, remoteness, and evidence of humans are taken into account when assigning a ROS class to a land area. Final land classifications are then plotted on a map.

On the ROS map, five ROS classes are used to describe the existing situation (recreation supply) in the Wilderness. The ROS inventory is as follows:

Table XX

ROS Class	ACRES	percent
Primitive I (PI)	179,800	68
Primitive II (PII)	61,700	22
Semi-Primitive Non-Motorized (SPNM)	16,100	6
Semi-Primitive (SPM)	16,100	6
Rural (R)	100	>1

Access. Boat use and aircraft are the only means of transportation to West Chichagof/Yakobi. Sitka, Pelican, and Elfin Cove are the three closest population centers. Most of West Chichagof is protected water making it relatively safe for small boats. The inland lakes provide good floatplane access. Ferry service to Pelican allows users to travel to close proximity of the wilderness.

Pre-ANILCA Helicopter Use. Scoping with Juneau and Sitka helicopter companies indicates that several locations have been identified as helicopter landing sites and landing "zones." For use to be included it must be: prior to 1980; "on a more or less regular basis;" and cannot include administrative flights (USFS, USGS, ADF&G, etc.). All use is in the process of being verified.

Arnie Johnson Helicopters Use:

The Cobal Mine area in Island Cove in Slocum Arm was heavily used to transport people and equipment for geologic and mining purposes.

Whitestone Mountain, Doolth Mountain, the upper drainages of Goulding Lake, Fleming Island, and Mirror Harbor were all used for geologic study and mining purposes.

Forest Service cabins at White Sulphur and Goulding Lake were used as landing sites for recreationists prior to the passage of ANILCA.

Rust Lake, Lake Elfendahl, Klag Bay, Ford Arm, and Falcon Arm were locations used for recreational fishing and beachcombing.

Herbert Graves Island and Hill Island were used as landing sites for fishing, hunting, and recreational purposes.

Sister Lake landing location was used for purposes of fisheries studies and proposals.

ERA Helicopters Use: ERA Helicopters landed at Goulding Lake, Kimshan Cove and Chichagof Mine where mining camps were located.

Temco Helicopters: Temco has used White Sulfur Hot Springs for dropping off visitors to the USFS cabin and the hot springs 5-25 times/year. The area around Kimshan Cove and the Chichagof Mine were used for mineral exploration and mining support 5-25 times/year.

Recreation Use. Due to Chichagof and Yakobi Islands large size and remoteness, accurate visitor use of the entire wilderness is difficult to ascertain and should be viewed as a "best guess." The numbers in the table below are expressed in Recreational Visitor Days (RVD) with one visitor day representing one visitor recreating for 12 hours.

Table XX
VISITOR USE

1988	114,250 RVDs
1987	119,900 RVDs
1986	101,715 RVDs
1985	103,500 RVDs
1984	103,500 RVDs

Cultural Resources

There are documented prehistoric sites within the West Chichagof-Yakobi Wilderness. Such sites exist, but surveys and inventories for the Wilderness have been very limited.

Ethnographic information about historic use of this Wilderness is sparse. There is a dispute between the Hoonah Tlingits and the Sitka Tlingits over who used which areas. The disagreement involves territory from Khaz Bay to as far north as Surge Bay. A total 13 documented historic village sites occur within the Wilderness. Their exact locations are not revealed here for reasons of site security.

The entire coast of the Wilderness was extensively used from the early 1900's to the 1950's. In addition to mining and mining related activities, there were a naval radio station, herring salteries, fish buying stations, stores, and residences. Probably the most widespread use was fox farms. Though none of these stayed in business for very long, they were prolific in the early part of this century. Many small and medium sized communities were located in the Wilderness; some 22 of them are recorded in Forest files.

Visual Resources

The visual character type of this wilderness is Admiralty-Chichagof. For the most part landforms in this unit are generally rounded. Notable exceptions exist, however, especially on the north portions of Chichagof Island where mountainous terrain tends to be rugged and snow covered most of the year. Mountain elevations vary from 2,500-3,500 feet on Chichagof. There is a narrow flat strand on the west side of Chichagof accompanied by a myriad of small islands.

Rocky islands, reefs, and rock bluffs are found frequently on the outer coast of Chichagof. Rocky shorelines interspersed with small gravel beaches are found throughout the character type. Higher portions of Chichagof (Black River to north tip of Yakobi) have rocky spires, stone faces, horns, and aretes visible for many miles that may be seen from adjacent waterways.

Many Large lakes such as Elfendall, and lake chains like Goulding, are found in this unit. Streams are generally short and swift and flow directly to saltwater on the west side of Chichagof. Streams in the rest of the unit are generally larger and longer than on other islands of southeast Alaska. All streams are clear and many offer considerable visual variety, e.g., pools, rapids, cascades, riffles, falls and meandering forms. Saltwater bays and estuaries are numerous and exhibit much variety, from small sheltered coves to large exposed forms. Often dramatic high energy seas occur on the outer coast of west Chichagof.

Numerous tidal meadows of varying sizes are found in this unit. Lower slopes are generally densely forested, but sometimes exhibit a combination of muskeg openings, brush, and scattered tree cover up to approximately 2,500 feet in

altitude. Muskeg-conifer mixtures are plentiful on west Chichagof. Upper slopes and summits appear barren from a distance, but usually offer a variety of alpine vegetation as well as numerous rock outcroppings.

The majority, 99% of this wilderness, is in Existing Visual Condition (EVC) 1; these areas appear to be untouched by human activity. The remaining 1% is in EVC 2; changes in the landscape appear to be unnoticed by the average person unless pointed out.

Subsistence

While any area within the Wilderness could have been used for taking personal use timber in the past, areas at the beginning of Lisianski Strait, in Stag Bay, and at the end of Lisianski Inlet probably received some of the highest use, primarily by Pelican residents. Mining operations in and around Klag Bay also probably caused high use in that area. Timber along the coastline of the Wilderness is used by fishermen to replace trolling poles in emergency situations. The demand for wood products from these areas will probably increase with population increases in Pelican and resumed mining operations in Klag Bay. Where possible this demand will be met by making timber available outside of the Wilderness.

A cooperative agreement exists between the State of Alaska and the Forest Service to permit beach log salvage to improve visual quality, reduce navigational hazards, and avoid waste of logs. There are currently no commercial beach log salvage operations in the West Chichagof-Yakobi Wilderness.

Gathering wild food and other items has been an integral part of the way of life in southeast Alaska for thousands of years. Residents of Hoonah, Pelican, Elfin Cove, and Gustavus depend a great deal on gathering wild renewable resources for food. Subsistence use is not static; it varies depending on species availability, population size, weather, and the local economy.

The whole coastal zone of the West Chichagof-Yakobi Wilderness has been used for subsistence gathering at one time or another. Hoonah residents have long used the outer coast of Yakobi Island for subsistence purposes, making use of abundant natural resources found there. Historically, they have used the Cape Bingham area for harvesting sea mammals, and the mouth of Lisianski Strait for sea mammals, waterfowl, and game. South of Lisianski Strait, beyond Porcupine Island, sea mammals are often harvested. Subsistence fishing is common at Stag Bay; and Lisianski Inlet is used for subsistence hunting.

Pelican residents mainly use Lisianski Inlet, Lisianski Strait, and Stag Bay. In these areas they harvest game animals, furbearers, waterfowl, and fish.

People engaged in mining operations around Klag Bay undoubtedly used the surrounding area for subsistence hunting of game animals, waterfowl, and furbearers, and for subsistence fishing. If mining operations resume in this area, subsistence use will probably occur once again.

Historically, Sitka residents have used the Wilderness for subsistence purposes. This use still continues, though at a level that is probably much less than that which occurred in the past during periods of greater occupancy. Areas where recent subsistence use has been documented include the Hoktaheen and Surge Bay areas on Yakobi Island, and Klag Bay/Lake Anna, Ford Arm, Takanis, and Leo's Anchorage on West Chichagof.

Present subsistence use does not appear to be taxing wilderness resources. The extent of future demand can be expected to remain constant for the life of this plan.

Scientific Values

Agencies such as the Alaska Department of Fish and Game, Forest Service, USGS, as well as universities, perform research on the flora and fauna and geology of the island. Because of its relatively pristine condition, West Chichagof/Yakobi acts as a "control" in comparison to other, more developed areas. A study on Slocum Arm began in 1981 by the USFS Forest Science Lab to study and describe symptom development of cedar decline. Slocum Arm has an extremely high mortality associated with the cedar decline.

(INSERT MAP OF WEST CHICAGO-YAKOBI WILDERNESS)

SECTION II

EXISTING DIRECTION AND GUIDELINES FOR PROVIDING AND MANAGING WILDERNESS RESOURCE OPPORTUNITIES

WILDERNESS ACT

The Wilderness Act of 1964.

The enactment on September 3, 1964 of the Wilderness Act established the National Wilderness Preservation System "to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy all lands ---, leaving no lands designated for preservation and protection in their natural condition". The Act declares that it is the policy of Congress "to secure for for the American people of present and future generations the benefits of an enduring resource of wilderness".

The Act immediately established in law all the wildernesses that the Forest Service had previously administratively designated over the preceding 40 years. From the initial 9.1 million acres initially designated, the National Wilderness Preservation System has grown to 474 areas totaling over 90 million acres.

The Act mandates that designated "wilderness areas"--- "shall be administered for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness". Subject to existing private rights, the Act prohibits permanent roads and; except as necessary for realizing the recreation and other wilderness purposes of the area, commercial enterprises. Temporary roads, the use of motor vehicles, motorized equipment, other mechanized equipment, motorboats, the landing of aircraft, structures and installations are prohibited except as necessary to meet minimum requirements for the administration of the area as wilderness. The Act provides that the use of aircraft or motorboats, where these uses have already become established, may be permitted to continue subject to restrictions by the Secretary of Agriculture. Wildernesses were withdrawn from mineral entry as of December 31, 1983 and patenting of valid claims limited to subsurface mineral rights.

ANILCA

THE ALASKA NATIONAL INTEREST LANDS CONSERVATION ACT (ANILCA)

Wilderness Designation

The enactment of ANILCA on December 2, 1980, added 43 areas totaling 56.4 million acres in Alaska to the National Wilderness Preservation System. Fourteen of the areas totaling 5.4 million acres were established within the Tongass National Forest.

In ANILCA, Congress reaffirmed and expanded upon the purposes of wilderness stated in the '64 Wilderness Act, specifically for wilderness established in Alaska. In recognition of unique situations and established uses in Alaska, ANILCA also provided a number of important specific exceptions to the prohibitions of the Wilderness Act.

Purposes of Designation

Section 101 of ANILCA states that it is the intent of Congress to "preserve unrivaled scenic and geological values associated with natural landscapes; to provide for the maintenance of sound populations of, and habitat for wildlife species of inestimable value to the citizens of Alaska and the Nation, including those species dependent upon vast relatively undeveloped areas; to preserve in

their natural state extensive unaltered arctic tundra, boreal forest, and coastal rainforest ecosystems; to protect the resources related to subsistence needs; to protect and preserve historic and archeological sites, rivers and lands, and to preserve wilderness resource values and related recreational opportunities including, but not limited to hiking, canoeing, fishing and sport hunting, within large arctic and subarctic wildland and on freeflowing rivers; and to maintain opportunities for scientific research and undisturbed ecosystems".((Sec.101(b)) The Act further states that it is the intent of Congress to "provide the opportunity for rural residents engaged in a subsistence way of life to continue to do so" consistent with scientific principles of game management and the purposes for which the areas are established.((Sec.101(c)).

In spite of its many exceptions to the Wilderness Act, ANILCA defines "wilderness" to have the same meaning as when used in the Wilderness Act ((Sec. 102(13)). Further, Sec.707 states that except as expressly provided in ANILCA, Alaskan wilderness "shall be administered in accordance with applicable provisions of the Wilderness Act governing areas designated by that Act as wilderness". Therefore, activities not discussed in ANILCA must be administered in accord with the Wilderness Act just the same as wilderness in other parts of the country.

Following is a summary of the specific sections of ANILCA that deal with wilderness and which provide specific management direction for National Forest wildernesses in Alaska:

Conservation System Unit	Section 102(4) defines a "Conservation System Unit" to include any unit in Alaska of the National Park System, National Wildlife Refuge System, National Wild and Scenic River System, National Trails System, National Wilderness Preservation System or National Forest Monument.
Mapping Requirements	Section 103 establishes boundary mapping requirements, provides for minor boundary adjustments.
National Monuments	Section 503 establishes Misty Fjords and Admiralty Island National Monuments as units of the National Forest System to "protect objects of ecological, cultural, geological, historic, prehistoric, and scientific interest." Harvesting of timber is prohibited within the monuments but measures to control fire insects and disease are allowed. Subject to valid existing rights, the monuments are withdrawn from mineral entry. Special provisions and procedures are established for the development of the Quartz Hill and Greens Creek mines within the Monuments. Life tenure is provided for the special use permit for Thayer Lake Lodge with Admiralty Island Monument Wilderness.
Unperfected Mining Claims	Section 504 establishes special procedures for "unperfected mining claims" within the Monuments.
Land Transfers and Exchanges	Section 506 transfers and exchanges certain lands within Admiralty Island Monument Wilderness to Native Corporations. The timber rights, subsurface estate, the right of public access and use, and development rights around Mitchell Bay, Kanalku, and Favorite Bay are reserved to the Federal Government. All rights and interest in the lands granted or reserved in this section "shall not be subject to the Wilderness Act".
Cooperative	Section 507 directs the Secretary of Agriculture to implement a cooperative

Fisheries Planning	fisheries planning process for the enhancement of fisheries resources through fish hatchery and aquaculture facilities and activities on the Tongass National Forest.
Tongass Wildernesses	Section 703 designates 14 wildernesses on the Tongass National Forest.
Wilderness Act Applies	Section 707 states that the provisions of the Wilderness Act apply to Alaskan wilderness except for specific exceptions provided by ANILCA.
RARE II Release	Section 708 provides RARE II release language for National Forest System Lands in Alaska through the initial planning cycle.
Subsistence Policy	Section 802 establishes a policy that "the utilization of public lands in Alaska is to cause the least adverse impact possible on rural residents who depend upon subsistence uses of resources of such lands; consistent with management of fish and wildlife in accordance with recognized scientific principles and the purposes for each unit established, designated or expanded" by the Act. This section also directs that the nonwasteful subsistence uses of fish, wildlife and other resources "shall be the priority consumptive uses of all such resources on the public lands of Alaska when it is necessary to restrict taking in order to assure the continued viability of fish or wildlife population or the continuation of subsistence uses".
Subsistence Defined	Section 803 defines subsistence use to mean: "the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade."
Priority Criteria	Section 804 establishes priority criteria for subsistence users for whenever it is necessary to restrict subsistence uses in order to protect the continued viability of fish and wildlife populations or continued subsistence use.
Evaluation Process	Section 810 establishes a process through which Federal agencies must evaluate the effects on subsistence uses and needs in determining whether to withdraw, reserve, lease or otherwise permit use, occupancy or disposition of public lands.
Subsistence Access	Section 811 mandates that the Secretary "shall ensure that rural residents engaged in subsistence uses shall have reasonable access to subsistence resources on public lands." This section further directs that, other laws notwithstanding, the Secretary "shall permit on the public lands appropriate use for subsistence purposes of snowmobiles, motorboats, and other means of surface transportation traditionally employed for such purposes by local residents, subject to reasonable regulation."
Mineral Assessment	Section 1010 mandates an assessment of the oil, gas, and other mineral potential on all public lands in Alaska. The mineral assessment program may include core and test drilling for geologic information, but not oil or gas test wells within wilderness. Air access is specifically allowed to carry out the mineral assessments.

**Transportation and
Utility Systems**

Title XI of ANILCA addresses transportation and utility systems in and across, and access into, Conservation Units.

Section 1101 finds that Alaska's transportation and utility network is largely undeveloped and identifies the need for an orderly continuous decisionmaking process involving the State, Federal Government and Public to determine the future needs for transportation and utility systems.

**Procedures and
Requirements**

Sections 1102 through 1108 define and establish detailed procedures, requirements and an expedited judicial review of transportation and utility system proposals to cross Conservation System Units. Section 1106(b) provides that transportation or utility systems that cross Wilderness must be approved by Congress after being recommended by the President.

Special Access

Section 1110(a) requires that the Secretary "shall permit" on Conservation Units, which includes Wilderness, "the use of snowmachines (during periods of adequate snow cover or frozen river conditions in the case of wild or scenic rivers), motorboats, airplanes, and nonmotorized surface transportation methods for traditional activities (where such activities are permitted by this Act or other law) and travel to and from villages and homesites." Such use is subject to reasonable regulation but shall not be prohibited unless after notice and hearing the Secretary finds that such use would be detrimental to the resource values of the area.

Inholding Access

Section 1110(b) assures adequate and feasible access to State and private land and to valid occupancies including valid mining claims.

Temporary Access

Section 1111 provides that the Secretary shall authorize and permit temporary access to the State or private landowners into or across wilderness to access their land for purposes of survey, geophysical, exploratory or other temporary uses, subject to regulation.

**Stikine River
Access Study**

Section 1113 requires a study and report to Congress on access alternatives to Canada along the Stikine (Stikine-LeConte Wilderness) and Iskut Rivers.

**New Special
Use Cabins**

Section 1303(b)(1) prohibits the construction of new special use cabins except after a determination that the proposed use, construction and maintenance is compatible with the purposes of the area and is directly related to the administration of the area or is necessary for the continuation of an ongoing allowed activity or use where the applicant has no reasonable alternative site for constructing a cabin. Eligible cabins may be authorized pursuant to a nontransferable five-year special use permit. Permits shall not be issued for the construction of cabins for private recreational use.

Pre-ANILCA Cabins

Section 1303(b)(2) provides for the continuation of traditional and customary use of pre-ANILCA cabins upon a determination that the use is compatible with the purposes for which the unit or area was established. Eligible cabins may be authorized pursuant to a nontransferable five-year special use permit. No permits shall be issued to use an existing cabin for private recreational use.

	Section 1303(b)(3) specifies the criteria and conditions of the permits in section (1) and (2).
Federal Ownership New Cabins	Section 1303(b)(4) requires that the United States shall retain ownership of all new cabins and that no proprietary rights or privileges are conveyed to the permit holders. Use of cabins not under permit are limited official government business except during emergencies involving the safety of human life or where designated as public use cabins.
Existing Cabin Leases or Permits	Section 1303(d) provides for the continuation and transfer of existing valid permits and leases subject to the terms of the original permits and leases.
Administrative Sites and Visitor Facilities	Section 1306 provides authority and direction regarding the establishment of administrative sites and visitor facilities
Revenue Producing Visitor Services	Section 1307 provides for the continuation of pre-ANILCA visitor services in Conservation System Units if those uses are consistent with the purposes for which the unit was established. Also provides preference to Native Corporations and local residents in the selection of providers of visitor services in Conservation System Units. Defines "Visitor Services" to mean "any service made available for a fee or charge to persons who visit a Conservation System Unit, including such services as providing food, accommodations, transportation, tours and guides excepting the guiding of hunting and fishing".
Local Hire	Section 1308 provides for a program of local hire in which certain civil service requirements and personnel limitations do not apply to persons living in or near Conservation System Units who have special knowledge of the natural or cultural resources of the unit.
Existing Navigation Aids and other Facilities	Section 1310(a) provides that reasonable access to, and operation and maintenance of existing air and water navigation aids, communication sites, facilities for national defense, and related facilities and existing facilities for weather, climate and fisheries research and monitoring shall be permitted. "Nothing in the Wilderness Act shall be deemed to prohibit such access, operation and maintenance within wilderness areas designated by this Act."
New Navigation Aids and other Facilities	Section 1310(b) provides that the establishment, operation and maintenance, within Conservation System Units, of new air and water navigation aids and related facilities, facilities for national defense, and facilities for weather, climate and fisheries research and monitoring shall be permitted after consultation with the Secretary and in accordance with mutually agreed upon terms and conditions to minimize the adverse effects within the Unit.
Applicability to Alaska	Section 1315(a) limits application of this section on wilderness management to Alaska.
Aquaculture	Section 1315(b) provides that the Secretary may permit fishery research, management, enhancement, and rehabilitation activities within National Forest System Wilderness, in a manner which adequately assures protection, preservation, enhancement and rehabilitation of the wilderness resource. Subject to reasonable regulations, permanent improvements and facilities such as fishways, fish weirs, fish ladders, fish hatcheries, spawning channels, and stream clearance, egg planting and other accepted means of

maintaining, enhancing, and rehabilitating fish stocks may be permitted. Facilities shall be constructed, managed and operated in a manner that minimizes adverse impacts on the wilderness character of the area and shall be constructed in a rustic manner as to blend with the natural character of the area. Reasonable access, including the temporary use of motorized equipment is authorized.

Existing Public
Use Cabins

Section 1315(c) provides for the continued use, maintenance and replacement of existing public use cabins within wilderness.

New Public
Use Cabins

Section 1315(d) authorizes the construction and maintenance of a limited number of new public use cabins and shelters, if necessary, for public health and safety. Also requires the Secretary to notify Congress of his intention to remove an existing or construct a new public use cabin or shelter.

Timber Contracts

Section 1315(e) requires the modification of pre-existing timber sales within the designated Wilderness and substitute timber be made available from non-Wilderness National Forest System lands.

Beach Log Salvage

Section 1315(f) allows the Secretary to permit or otherwise regulate the recovery and salvage of logs from the coastlines of National Forest wilderness and monuments.

Allowed Uses
Temporary Facilities
for Hunting
and Fishing

Section 1316(a) provides that the Secretary shall permit, subject to reasonable regulation to insure compatibility, the continuation of existing uses and future establishment and use of temporary campsites, tent platforms, shelters, and other temporary facilities and equipment directly and necessarily related to the taking of fish and game. Facilities and equipment shall be constructed, used and maintained in a manner consistent with the protection of the area where they are located. New facilities shall be constructed of materials which blend with and are compatible with the surrounding landscape.

Criteria for Denial

Section 1316(b) allows the Secretary to deny new facilities and equipment upon making a determination, after public notice, that the establishment and use of new facilities or equipment would constitute a significant expansion of existing facilities or uses which would be detrimental to the purposes for which the unit was established, including "wilderness character".

Access to NF System
Inholdings

Section 1323 provides that the Secretary shall provide access, that he determines adequate, to nonfederally owned land within the boundaries of National Forest System lands.

REGIONAL GUIDE

The Southeast Alaska Guide, predecessor of the Regional Guide, developed policies to guide the preparation of the Tongass Land Management Plan and the management of "any future classified Wilderness Areas." The Alaska Lands Act (ANILCA) designated wilderness areas on the Tongass National Forest and provided for Wilderness study on the Chugach National Forest. The 1964 Wilderness Act had the flexibility to allow existing uses to continue in an area, if they were compatible with wilderness values. In addition, the Alaska Lands Act specifically authorized a number of uses to minimize impacts on current users of the land and to provide for facilities necessary for certain types of economic development. These special provisions of the Alaska Lands Act are covered in the

policy provisions of this [Regional Guide] section. The policies from the 1964 Wilderness Act as stated in the Forest Service Manual 2320 apply except as amended by Alaska Lands Act (ANILCA) policies. Any alternative use restrictions for individual wilderness areas will be made through the Forest land management planning process and must have public involvement and support.

1. Management prescriptions for individual wilderness areas will be developed through the Forest planning process. Restrictions on public uses may be made in these plans with public involvement and support.
2. Reasonable conditions may be imposed on any use, if necessary to protect soil, water, or other resources from damage.
3. Airplanes, motorboats, and snowmachines (during periods of adequate snow cover) and nonmotorized surface transportation methods will be allowed within a wilderness. No overall prohibitions will be imposed on these uses. However, motorized use may be prohibited or restricted in designated areas through the planning process; formal public hearings will be held on any such proposal in addition to the public involvement which develops the proposal.
4. Adequate and feasible access is given to owners of land, subsurface rights, valid mining claims on other valid occupancies which are within or effectively surrounded by a wilderness area.
5. Hunting, fishing, and trapping will continue subject to State regulations.
6. Timber will not be cut, sold, or harvested as a part of the regular timber sale program. The following types of use may be permitted if done in a manner that minimize impacts on the wilderness (Standards and guidelines on permitted uses of wilderness will be developed through the planning process in number 1 above).
 - a. Salvage of beach logs if done in a manner that leaves no lasting impact on the beach or uplands.
 - b. Salvage timber cut as part of some authorized use within the wilderness (e.g., clearing for a fish hatchery);
 - c. Fuel, shelter, or other non-wasteful subsistence uses if the individual does not have a suitable source equally accessible outside of the wilderness;
 - d. Cutting of trolling poles on an emergency basis by fishermen using adjacent waters.
 - e. Cutting timber for use within the wilderness for authorized uses (e.g., trail maintenance, shelter construction).
7. Aquaculture projects may be authorized in wilderness to meet the goal of restoring and maintaining fish production to optimum sustained yield levels. Cooperative fisheries planning with the State will be the basis for determining aquaculture facilities needed within wilderness areas. To the extent that opportunities are available and economically feasible, man-made facilities and treatments that would introduce new species or gene pools into a watershed will be planned for areas outside wilderness. However, all forms of aquaculture projects may be authorized in wilderness if necessary to the meet the goal.
8. Privately constructed cabins or similar structures:

- a. Existing valid special use permits for cabins, homesites, or similar structures will be renewed unless the Regional Forester finds (following notice to and an opportunity for the permittees to respond) that the permit constitutes a direct threat or a significant impairment to the purposes for which the wilderness was established.
 - b. Existing cabins and related structures for which a valid permit does not exist may be issued nontransferable, renewable 5-year special use permits for special use permits for customary uses which are compatible with the purposes for which the wilderness was established. No permit will be issued for private recreation use.
 - c. Construction of new cabins may be authorized by the Regional Forester by nontransferable, 5-year special use permits. The proposed cabin must be either directly related to the administration of wilderness or necessary for an authorized activity and use where the applicant has no reasonable alternative site for constructing a cabin. No permits shall be issued for the construction of private recreation cabins. Any new cabin constructed will be the property of the United States.
 - d. Cabins or other structures not under permit shall be used only for official Government business--provided, that during emergencies involving human safety or where designated for public use by the Forest Supervisor, such cabins may be used by the general public.
9. Existing public recreation cabins and shelters may continue to be used, maintained, and replaced. A limited number of new cabins and shelters may be constructed and maintained where necessary for the protection of public health and safety. Public use patterns will be monitored and the location and number of cabins and shelters will be adjusted to best fit the health and safety needs of the user. A recreation opportunity spectrum and public health and safety analysis will be the basis for making decisions through the Forest planning process. Congressional committees shall be notified of any proposed addition or deletion of cabins or shelters within wilderness.
 10. Persons who on or before January 1, 1979, were engaged in adequately providing any other type of visitor service shall be permitted to continue providing such services within that wilderness if consistent with wilderness purposes.
 11. Existing navigation aids, communications sites, and facilities for National defense purposes, weather, climate, fisheries research and monitoring are permitted. New facilities for these purposes shall be permitted but only in accord with conditions which minimized adverse effects on the wilderness. The use of motorized access and equipment is authorized. Forest Supervisors will consult with permittees to develop procedures which will minimize impacts on the wilderness without unreasonably limiting the operation and maintenance of permitted facilities.
 12. Forest Supervisors will jointly plan their wilderness areas with appropriate State agencies to resolve joint issues in fish and wildlife management, compatible use of State-owned or controlled lands and to establish mutually beneficial direction.
 13. Key parcels of private land will be acquired as opportunities arise through land purchase, donation, or exchange authorities. Such acquisition will be on a voluntary basis.

14. Guidelines will be developed through the Forest planning process for the Forest Service use of motorized equipment in wilderness. The Forest Service will minimize impact of its own activities on wilderness and the experience values of the visitor.
15. The Forest Service shall permit the continuance of existing uses and the future establishment and use of temporary campsites, tent platforms, shelters, and other temporary facilities and equipment directly and necessarily related to the taking of fish and wildlife. A revocable special use permit will be issued to allow such occupancies. The Regional Forester may determine, after adequate notice, that the establishment and use of new facilities or equipment would constitute a significant expansion of existing facilities or uses which would be detrimental to the purpose for which the Wilderness was established, including its wilderness character. Forest land management plans will identify the location and levels of such use as of December 2, 1980, and the need to expand or restrict such use.
16. Implement "No Trace" woodsmanship and "Pack-It-In/Pack-It-Out" programs for all wilderness visitors.

FSM 2320 R-10
SUPPLEMENT

More specific direction on the policies noted above can be found in the Forest Service Manual 2320, R-10 Supplement.

TLMP DIRECTION

There were no designated wilderness areas on the Tongass National Forest when TLMP was initially completed; however, management direction for wilderness was added when the plan was amended in 1986.

1985-86 AMENDMENT
OF TLMP

The 1985-86 Amendment to TLMP recognized the 14 new Tongass Wildernesses established after the original plan was approved and provided concise management direction/emphases statements that the areas were to be managed for wilderness values. The amendment includes schedules of specific management activities such as fisheries enhancement and trail construction projects for some wildernesses but most direction is referenced or deferred to the individual "wilderness plans" or Wilderness Management Direction Documents (WMDDs). (See Appendix A)

APPROVED WILDERNESS
MANAGEMENT DIRECTION
DOCUMENTS

Twelve individual management documents, one of which covered three wildernesses including Coronation Island, Warren Island and the Maurelle Islands, were developed as individual Environmental Assessments, however, only five were approved. Management direction has been approved for the Admiralty Island National Monument Wilderness, Endicott Wilderness, South Baranof Wilderness, Tracy Arm-Fords Terror Wilderness, and the Stikine-LeConte Wilderness. (See Appendix B)

APPEAL DECISION
MODIFICATIONS
TO MANAGEMENT
DIRECTION

The decisions to adopt the preferred alternatives in the Admiralty Island NM Wilderness and the Stikine-LeConte EA's were appealed. The Admiralty Management Direction which was approved by the Regional Forester November 22, 1983 was amended August 5, 1985 to conform to the Chief's decision on the Admiralty Appeal. The appeal of the Stikine-LeConte resulted in a two year appeal process which established new policy regarding the public use of helicopters and the use of chain saws and generators by permittees in wilderness in Alaska. The Chief's August 11, 1986 decision amended the Regional Forester's November 26, 1984 decision to approve the Stikine-LeConte Management Direction in two areas of

concern: (1) Whether use of helicopters by the general public for recreational access to wilderness in Alaska is consistent with law and Forest Service policy; and (2) Whether the use of chainsaws and/or generators by recreation residents and recreation cabin permittees in close proximity of their special use structures is consistent with the law and Forest Service Policy.

STIKINE-LECONTE
APPEAL DECISION

In his August 11, 1986 decision, the Chief recognized the right of motorized access (by airplanes, motorboats and snowmachines) as provided by ANILCA section 1110(a) and noted that "other methods of transportation" are permissible within Alaska wilderness areas "where such use is permissible by this Act or other law." The other law cited is Section 4(d)(1) of the Wilderness Act which allows that the use of aircraft may be permitted where it has already become established. He said, as a matter of Forest Service policy, that expanding the types of air access into Alaska wilderness areas should not be encouraged unless the types were used in an area on a more or less regular bases as of the date of ANILCA. He noted that any aircraft use based on uses which were established at the time of designation must be approved by the chief in accordance with the Code of Federal Regulations (36 CFR 293.6(d)). He concluded the "At this time, there is no evidence (in the appeal record) that helicopter use has ever been established in the Stikine-LeConte Wilderness and, therefore, because it is incompatible, it is not approved".

In his decision the Chief determined that use of chainsaws and generators by recreation residents and recreation cabin permittees in close proximity to these structures is not required by ANILCA (sections 1316(a) or 1303(d), and such use is contrary to Forest Service policy. Therefore, such uses are not to be permitted in the Stikine-LeConte Wilderness. The Chief, however, provided the Regional Forester some latitude in phasing out these mechanized uses by recreation residents and recreation cabin permittees in wilderness areas.

The Chief directed that existing wilderness management direction documents be revised to conform to the direction given in his appeal decision and to the changes negotiated with the appellant. He further directed that future management plans be consistent with this decision and that the Regional Supplement to FSM 2320 be revised to conform to this decision.

Because of the pending TLMP Revision which includes the revision of all the management direction for individual Tongass wilderness areas, implementation of the Chief's decision on Stikine-LeConte and the revision and completion of the other wilderness management direction documents were incorporated into the TLMP Revision. (See Appendix B for the approved Wilderness Management Direction Documents)

SUMMARY OF EXISTING
MANAGEMENT DIRECTION

The Tongass Land Management Plan was completed prior to the the enactment of ANILCA which established 14 separate wildernesses on the Tongass and contained many special provisions for the management of wilderness in Alaska. TLMP was amended in 1985-86, but the amendment deferred specific management direction to individual Wilderness Management Direction Documents (WMDD's). Only 5 of the WMDD's were approved before an appeal of the Stikine-LeConte WMDD resulted in a decision by the Chief of the Forest Service that modified existing regional direction regarding the use of helicopters by the public and the use of chainsaws and generators by cabin permittees in wilderness. The lengthy appeal process which took over two years derailed the completion and approval of the remaining nine WMDD's. Consequently, there is a need not only to complete management

direction for the 9 wilderness areas without approved WMDD's, but also to revise the existing direction to conform with the Chief's decision on Stikine-LeConte and to provide consistent direction to all 14 Tongass wilderness areas.

SECTION III

RESULTS OF IMPLEMENTING EXISTING DIRECTION

This section briefly describes what has been accomplished in implementing the existing direction discussed in the previous section of this document. It also describes monitoring activities that have been conducted; summarizes the results of the monitoring; and notes any changes of direction that are indicated by the results of the monitoring.

ACCOMPLISHMENTS OF IMPLEMENTATION

Following is a summary of what has been accomplished in implementing existing direction for each Wilderness:

ADMIRALTY ISLAND WILDERNESS

Since the AINMW Management Direction was approved, many of the targets in the direction have been attained. Several major trail construction projects have been completed including the Pack Creek trail, Freshwater Lake to Thayer Lake Trail, and a stretch of trail from the Hasselborg River cabin to the river. Several other potential areas for trails have been reconnoitered. The Shee Atika cabin site exchange has been completed and 63 acres at Wheeler Creek were acquired through the Trust for Public Land. Improvement work has been done at the Angoon bunkhouse. Several projects are in progress or are in advanced planning stages: reconstruction of the West Florence cabin, reconstruction of the Hasselborg river cabin, and reconstruction of the Pack Creek bear observatory.

An analysis of the hydroelectric project and private fish hatchery in Favorite Bay was performed and this indicated the project is not feasible at this time. Several other stream habitat improvement projects are still being considered at this time.

CORONATION, WARREN MAURELLE WILDERNESSES

No management activities or development was proposed for this area in the 1985 TLMP Amendment.

The only management activities in these areas have been some resource inventory trips in 1983 and since then some brief monitoring trips by fixed wing aircraft

ENDICOTT WILDERNESS

There has been no work done in the wilderness.

MISTY FIORDS WILDERNESS

The following accomplishments have been completed using existing direction:

1. Alava Bay Buoy replaced - 1985
2. Klahini Bay Buoy replaced - 1985
3. Ella Bay Buoy - 1985
4. Punchbowl Lake Shelter Construction - 1986
5. Winstanley Trail Buoy - 1986
6. Princess Bay Buoy - 1987
7. Ella Trail Re-construction 1985
8. Nooya Bridge construction - 1985
9. Nooya Trail Re-construction - 1986

10. Punchbowl Trail Re-construction - 1986
11. Winstanley Trail Re-construction - 1987
12. Marten River Fishpass - 1987*
13. Administration of mining claims - annually
14. Hugh Smith Lake Fertilization - 83-86
15. Badger Lake Bio enhancement - 84-88

* The decision to construct the Martin River Fishpass was appealed but the decision was upheld and the project completed.

PETERSBURG CREEK
DUNCAN SALT CHUCK
WILDERNESS

The Petersburg Lake Trail was reconstructed in the mid 1980's. In addition, right-of-way for the trail was secured from the City of Kupreanof, private landowners, and the State. This right-of-way is outside of the wilderness but is important for maintaining access to the area. A cabin study done on the area in 1987 identified a need for the removal or relocation of the Salt Chuck West Cabin. This was based on public comments, the cost of maintenance, and the difficult access. This recommendation has been incorporated into outyear planning for the area.

RUSSELL FIORD
WILDERNESS

None to date.

SOUTH BARANOF
WILDERNESS

Management direction and emphasis in TLMP Amendment and South Baranof Wilderness Management Direction as well as other environmental documents associated with the wilderness has been followed as planned. Management Direction and emphasis listed in TLMP Amendment addresses protecting wilderness values, provides that fish enhancement under approved plans will continue, and that beach log salvage may take place on the east coast of Baranof Island within the wilderness.

A decision to allow a fisheries enhancement project involving the construction of a fish ladder at Falls Lake was appealed by the Sitka Conservation Society in 1986. The Chief upheld the decision, but directed that decisions on future enhancement projects be made on a multi-project, large area, basis carefully considering the need for projects in wilderness compared to non-wilderness.

SOUTH PRINCE-OF-WALES
WILDERNESS

None of the activities proposed in the 1985 TLMP Amendment have been implemented. The only Forest Service management activities in the area has been a series of monitoring trips to the area.

STIKINE-LECONTE
WILDERNESS

Following is a summary of what has been accomplished in implementing existing direction in the Stikine-LeConte Wilderness:

As of the spring of 1988, twenty-seven trespass structures have been identified within the Stikine-LeConte Wilderness. Thirteen of these structures are believed to pre-date ANILCA. After the advertisement of the possibility of obtaining

special use permits in accord with ANILCA, the owners of three of these structures came forward and submitted applications for special use permits. This leaves twenty-four existing trespasses, of which ten may pre-date ANILCA to be resolved.

In 1984, the picnic site at Twin Lakes was removed. This was in response to an appeal of the Stikine-LeConte Management Plan. The Twin Lakes Cabin was moved to a more accessible location at the mouth of the Twin Lakes Slough during late summer of 1985. There was an immediate increase in the use of the cabin following the move.

The existing hot tubs at Chief Shakes Hot Springs were rebuilt in 1981 and 1985 and have been very well received by the using public. The low water boat landing was reconstructed in 1984 to stabilize the stream banks, and for health and safety reasons. The high water landing was reconstructed in 1988 for the same reasons. The trail from the high water boat landing was reconstructed in 1988. The Gut Island #1 Forest Service Public Use Cabin was reconstructed in order to meet health and safety standards in 1982.

A trail from Mallard Slough Cabin to the grass flats north of the cabin was constructed in 1986.

Baseline data has been gathered for certain resource areas, such as vegetation, wildlife, fish, and hydrology.

TEBENKOF BAY WILDERNESS

The major accomplishments in this Wilderness were trail construction and the development of a brochure. In 1985 the Alecks Creek, Affleck Canal, and Bay of Pillars portages were located and established. They have been improved slightly since then, however are still considered primitive and difficult. The major improvements were signing and blazing, brushing, and logging out. In 1987 a brochure was developed to provide basic information on the Tebenkof Bay Wilderness. It discusses the setting in general, the difficulty in access, and describes the portage trails and Canoe/Kayak routes. A map is also included.

TRACY ARM-FORDS TERROR WILDERNESS

No work has been done in the wilderness.

WEST CHICHAGOF-YAKOBI WILDERNESS

Management direction and emphasis in TLMP Amendment has been followed as planned. Emphasis addresses validation of existing claims, analysis of access for planned start up of mining activities, and feasibility studies in structural fisheries enhancement.

Two claims in Pinta Bay are in the process of validity examination. No other plans of operations or claims have been submitted. Lease options have been dropped by Sitka Gold.

Reconnaissance studies of structural fisheries enhancement have been confirmed as cost effective. Results of these studies are detailed in the fish stocking and enhancement section in Section I of this document.

A decision to issue a special use permit for temporary facilities for the taking of fish and wildlife was appealed by the Sita Conservation Society and an individual user of the area.

MONITORING

The following monitoring has been accomplished:

ADMIRALTY ISLAND WILDERNESS

Monitoring of Wilderness condition on Admiralty Island started in 1982 and has focused on campsite inventory and observation of visitor numbers. Campsite inventory methods were developed using a "Limits of Acceptable Change" approach. 30 sites were inventoried in 1985 and again in 1989 for impacts to trees, soils, vegetation and other site resources. Use of campsites by visitors has been monitored each year in order to relate impacts to various use levels. The study is ongoing and an interim report in 1986 was completed.

Observations of visitor numbers have been recorded by wilderness rangers in Mitchell Bay, the Canoe Route and at Pack Creek. Rangers contact visitors to educate and provide information and they summarize visitor counts each year. An annual report has been prepared since 1982 with total visitation in each area recorded.

Ranger boat trips and intermittent trips to special use facilities on Admiralty are also used for monitoring activities.

The USF&WS performs annual counts of bald eagles in the Seymour Canal Eagle Management Area. ADF&G is studying bear movement and behavior at Pack Creek and Greens Creek. In addition, ADF&G monitors salmon fisheries with a weir at King Salmon River and by walking streams on Admiralty.

CORONATION, WARREN MAURELLE ISLANDS WILDERNESS

Monitoring activities in these areas over the past years has included only a few fixed-wing flights over these areas, primarily to identify any possible trespass activities and to observe where recreation use if any is occurring.

ENDICOT WILDERNESS

No monitoring has been accomplished other than to observe the use of an illegal airstrip.

MISTY FIORDS WILDERNESS

Observation of visitors in the Monument indicated an increase in paddle craft visitors. In response to this increased user group a Kayaking Wilderness Ranger program was initiated. The following monitoring has been implemented through the Wilderness Ranger program: use levels have been taken, use patterns have been observed, and types of equipment use is documented.

Monitoring of fisheries enhancement projects has been accomplished as follows: Hugh Smith Lake evaluation of stocking and fertilization, 1983-86, Badger Lake monitoring of effects of bio-enhancement, 1983-86, Marten River monitoring of fishpass project, 1988-89.

PETERSBURG CREEK
DUNCAN SALT CHUCK
WILDERNESS

Monitoring has been informal and generally consists of the following sources:

1. Cabin comment cards.
2. Forest Service maintenance crews.
3. Public contacts, both personal and by mail.
4. Periodic volunteer and Forest Service patrols.
5. Periodic inspections of facilities, permits, etc..
6. Overflights of the area by the Forest Service.

RUSSELL FIORD
WILDERNESS

Virtually all the monitoring has been related to the Hubbard Glacier closing off Russell Fiord.

SOUTH BARANOF
WILDERNESS

Monitoring activities are on-going related to fisheries and wildlife activities in the wilderness. They are as follows:

1. Contract with Alaska State Fish & Game to measure water quality in wilderness lakes.
2. Monthly coho growth and survival.
3. Monthly zooplankton sampling.
4. Annual smolt innumeration.
5. Adult coho returns.
6. Adult contribution to commercial fisheries.
7. Fishpass utilization, mortality, and flow data.

Limnological studies have shown lakes in VCU's 344 and 332 to be suitable for coho rearing with no impacts to wild stocks. As a result, the decision to exclude these VCU's from use was changed in TLMP amendment.

Alaska Department of Fish and Game (ADFG) is conducting various sport fish and commercial fish surveys to check coho populations, subsistence use studies, and sport fish lake studies. As a result of some commercial fish surveys, ADFG moves fisheries regulatory markers as necessary.

Bear Harvest information is taken by ADFG along with fur-bearing mammals such as otter, beaver, and marten. Alaska Department of Fish and Game also takes winter deer kill counts and pellet group transects to use in determining population trends. Aerial goat counts are taken by ADFG and USFW performs annual counts of bald eagles.

Monitoring activities associated with special uses and recreation include:

1. Annual ranger boat trip to study dispersed recreation use and special use compliance.
2. Annual trail and cabin maintenance trips.

SOUTH PRINCE-OF-WALES
WILDERNESS

A reconnaissance of the South Prince of Wales Wilderness was completed on July 14-16, 1987. The purposes of this trip were: 1) to inspect the wilderness, 2) to determine current use patterns and identify potential camping sites, and 3) to

identify impacts of present use, and possible impacts of future use, on the wilderness resource.

An additional trip was taken during the summer of 1989 to visit some of these same sites as well as some new sites to identify recreation or other use.

STIKINE-LECONTE WILDERNESS

Monitoring has been informal and generally consists of the following sources:

1. Cabin comment cards.
2. Forest Service maintenance crews.
3. Personal public contacts.
4. Letters from users.
5. Inspections of special use permits and Forest Service facilities.
6. Over flights by Forest Service personnel.
7. Outfitter/Guide reports.
8. State of Alaska, Fish & Wildlife Protection Officers.
9. Two Forest Service Volunteers on river 6/25/81-8/2/81, monitoring uses.
10. Two Forest Service Volunteers on river 6/16/82-9/6/82, monitoring uses.
11. State of Alaska, ADF&G, Fish and Wildlife Biologists monitoring fish and wildlife population levels.
12. Forest Service and USGS Hydrologists monitoring bank stability and river levels.
13. Forest Service Public Use Cabin permit compliance checking.

TEBENKOF BAY WILDERNESS

Monitoring of the Tebenkof Bay Wilderness has been informal and sporadic. The remoteness and lack of facilities makes it expensive and difficult to monitor. Monitoring emphasis has been increasing. In 1989 a trail crew was present in the bay for eight days, the first visit in a couple of years. The trail crew also worked on other portage trails which access the wilderness, thus contacting kayakers heading into the area. All of the portage trails had register boxes placed at trailheads in 1989. Additionally, new outfitter/guide permits are increasing monitoring capability.

The special use cabin permittee has been a volunteer employee since 1984 and inventories visitor use throughout the year.

TRACY ARM-FORDS TERROR WILDERNESS

Sporadic monitoring in the form of short skiff trips and a ranger boat trip have been done.

WEST CHICHAGOF-YAKOBI WILDERNESS

Monitoring activities that are ongoing in West Chichagof/Yakobi include the following:

Northern Southeast Aquaculture stocked Lake Elfendall with coho and monitored their growth. Because of high mortality due to parasites continued stocking of Elfendall was curtailed.

The USFS has stocked Suloia Lake with rainbow trout. Annual population studies are performed to determine if the trout are spawning. One more stocking will be completed. If the trout don't spawn to maintain their own numbers, the project will be abandoned.

The Commercial Fisheries Division of ADF&G performs aerial escapement surveys in all streams running salmon in the West Chichagof/Yakobi Wilderness. Frequency of these surveys varies from 1 to 10 times per year depending the specific stream. A weir is maintained at Ford Arm to do escapement counts of Coho salmon.

Bear harvest information is taken by ADF&G along with fur-bearing mammals such as otter, beaver, and marten. ADF&G also takes winter deer kill counts and pellet group transects to use in determining population trends. Wilderness lakes are measured for water quality by the State. Bald Eagle counts are conducted by USF & WS.

Special use compliance and dispersed recreation impacts are monitored annually in the Wilderness by Ranger boat trips. Seasonal maintenance trips to cabins and trails also help monitor use. Cabin users are encouraged to send form postcards to the district office to provide input about their recreation experience. This information is used to modify the frequency and type of maintenance.

RESULTS OF MONITORING

Following is a summary by Wilderness of the results of the monitoring that was accomplished:

ADMIRALTY ISLAND WILDERNESS

Campsites show the expected impact from use by visitors, but the relationship between increasing use and increasing impact is not linear. Impacts are noticeable when sites are used for just a few nights each year. When sites are used moderately or heavily the impact is greater, but not as much as expected given the much higher use. Some lightly used sites show a large amount of impact due to "high impact" groups who cut trees, litter heavily and burn-out vegetation. Other more heavily used sites show less obvious impact due to continual cleanup by rangers.

Visitation at Mitchell Bay and Pack Creek has dramatically increased from 100 visits in 1982 to over 950 visits in 1987. Use at Pack Creek has dropped the past two seasons down to around 600 visits. Canoe Route visitation has fluctuated from a high of 520 visits in 1987 to a low of 233 visits in 1988. Guided groups from small lodges, boat services, or canoe/kayak companies account for much of the increase in use at Mitchell Bay and Pack Creek, although non-guided individuals are also discovering these areas in greater numbers as publicity has spread. For more specific information on visitor use in these areas refer to 1988 Visitor Use of Mitchell Bay, Canoe Route and Pack Creek on file at the Admiralty office in Juneau.

CORONATION, WARREN MAURELLE ISLANDS WILDERNESS

Over the past few years monitoring in this area has consisted of a few fixed-wing flights over the area, primarily to check for possible trespass situations and observe any recreation use. There are no available reports on these trips and their results, other than verbal communication from the Thorne Bay District that

there were some indications of trespass activity that needed follow-up investigations.

ENDICOTT
WILDERNESS

None.

MISTY FIORDS
WILDERNESS

It is to soon after the field season to have a completed summary of the monitoring efforts of the Wilderness Ranger program.

The results of the fisheries enhancement monitoring related to Wilderness resource administration (effect on pre-existing environment) has not been completed to the point of an evaluation.

PETERSBURG CREEK
DUNCAN SALT CHUCK
WILDERNESS

One special use permit for an electronics site is reviewed annually. Field inspection occurs about every 5 years. The results of this monitoring indicate no change in management is needed.

Monitoring has identified noise impacts from aircraft overflights. This disrupts values of solitude and remoteness. This disruption is a function of visitor use and the amount of air traffic. The Petersburg Creek drainage is a primary corridor for daily flights, mainly between Kake or Portage Bay and Petersburg. It is not known whether this use is on the increase or not. An increase in the frequency of comments on this concern might necessitate more formal monitoring of this impact.

Few changes in management are indicated for the Maintenance inspections of cabins and trails indicate a need for semiannual maintenance. A 1989 trail survey indicated heavy storm damage from the previous winter, and some backlog of heavy maintenance items. Plans are currently being made to correct these deficiencies and bring the trail up to standard.

Dispersed use is monitored through the use of cabin permits and trail registers. Monitoring has not revealed any major changes in use patterns or impacts.

Plans are being developed for a Timber Sale and road construction adjacent to the northwest portion of the wilderness area. Depending on the extent of development selected, changes to the ROS setting may occur, along with road access to this side of the Wilderness. These impacts will be tracked during the NEPA process.

RUSSELL FIORD
WILDERNESS

The Hubbard Glacier continues to threaten to close off the mouth of Russell Fiord.

SOUTH BARANOF
WILDERNESS

Some facility changes will occur as a result of evaluations of visual quality effects to occur in 1989. These evaluations will be incorporated into the

Comprehensive Salmon Plan Process, to determine the course of temporary versus permanent structures.

Changes in management as the result of monitoring have not occurred. However, site specific modifications have been made as a result of monitoring. Trails extensively used and contracted by NSRAA have been improved to minimize resource damage. Changes in lake treatments are consistent with management direction in the wilderness plan.

Monitoring trips also facilitated the removal of Sandy Bay Hatchery and fish camps left by the Tlingit Haida fisheries. Sandy Bay Hatchery site clean up and rehabilitation is due for completion in 1992.

Campsites show the expected impact from use by visitors, but the relationship between increasing use and increasing impact is not linear. Impacts are noticeable when sites are used for just a few nights each year. When sites are used moderately or heavily the impact is greater, but not as much as expected given the much higher use. Some lightly used sites show a large amount of impact due to "high impact" groups who cut trees, litter heavily, and burn out vegetation.

Sites used by land-based outfitter-guides show minimal impact even after use by large groups. This may be due to the wilderness ethics of those user groups as well as compliance monitoring accomplished by Forest Service personnel.

SOUTH PRINCE-OF-WALES WILDERNESS

A 1987 Wilderness Monitoring report, documents a reconnaissance of South Prince of Wales Wilderness that was completed July 14-16, 1987. Seven potential camping sites were inventoried. Little to no use of the sites was reported. Some fire rings, litter, and a few cut saplings were observed.

Due to it's isolated location, the South Prince of Wales Wilderness receives relatively little use compared to other wildernesses. The primary use is by commercial fishing vessels, with a secondary use by recreationists such as kayakers, hunters, and trappers.

Recreational use of the wilderness is expected to increase somewhat in the near future. This is indicated by increasing inquiries by the public about the area, by a greater number of reports of kayak trips, and by a general increase in recreational use on the Prince of Wales Island.

Possible future impacts of increased use include: 1) evidence of camping such as increased litter and trash, fire rings, cut and damaged trees, and soil compaction in popular sites; 2) more fishing and hunting pressure; and 3) a greater number of contacts between users.

STIKINE-LECONTE WILDERNESS

Following is a summary of the results of the monitoring that has been accomplished for the Stikine-LeConte Wilderness:

Air	Lichens were gathered to be analyzed to provide air quality base line data.
Soil	A study of the impacts of motorboat wakes on stream bank stability.

Lands

The activities on inholdings perpetuate a perception that it is all right to do in the wilderness what you do on the inholding with motorized or mechanized equipment.

There is concern that owners of inholdings may perform activities such as logging that will have long term impacts on the visual quality and primitive settings of the river valley. The trees on ten acres of private inholdings have already been felled.

Non-recreation
Permits

There is a need for log raft tie-up areas for logs being rafted down river from Canada.

Temporary Facilities
and Camps

The majority of the 24 trespass structures are associated with moose hunting camps. When given the opportunity to obtain a permit for a structure that was in trespass, less than 25% of the owners of pre-ANILCA cabins did so.

Wilderness

There are numerous conflicts. Non-local use is increasing and these users often think of Wilderness in the context of the 1964 Wilderness Act. When they encounter the large amount of low level aircraft traffic and the motorized use of the river, they experience something much different from what they had anticipated, with respect to quiet and solitude and being away from the sights and sounds of man. Many of the non-local users travel on the river in non-motorized water craft. They are offended and often frightened and/or endangered by high powered motor boats traveling at high rates of speed along narrow and confined channels.

Local users tend to travel and use the river via motor boat. There are documented fatalities and numerous injuries caused by irresponsible and illegal operation.

Some of the younger local users tend to use the Chief Shakes Hot Springs, the Twin Lakes area and the Desert as sites to congregate for, among other things, the consumption of alcoholic beverages and the use of controlled substances. Associated activities include playing volleyball, listening to loud music on stereo systems, riding motorcycles and all terrain vehicles, water skiing, playing volleyball, football, softball, and high speed follow the leader in river boats. Boisterous behavior including shouting obscenities and making obscene gestures at passing boats has been documented. All of the above were observed by or reported to Wrangell District personnel during the 1988 or 1989 seasons. When reported by wilderness users, their attitudes ranged from amazement to very definite anger. The above activities are often accompanied by severe littering.

In contrast, there are several local users who seldom come out of the river without several bags of other peoples trash in their boat. There are several local users who make a point of cleaning up any litter at the hot tubs. Contacts with these citizens reveal that they are proud of the quality of the site, they use it frequently and don't like to see it trashed out. This indicates support for the facility, and that programs such as "Pack it in, Pack it out" may be getting through, and that a well designed, constructed and maintained facility may generate respect that actually reduces operation and maintenance costs. This observation is based on the knowledge that some of the people who are now supporting Forest Service management of the area used to be some of the more flagrant offenders.

Local users in turn feel threatened by non-local users opinions of acceptable uses and conduct within Wilderness. The Stikine River has long been a back door playground for the local communities. The provision in ANILCA for certain types of motorized access and other exceptions to the 1964 Wilderness Act, gives the impression of business as usual and that nothing really changed with designation of the area as Wilderness. The apparent inconsistencies presented by motorized access and use of power equipment for the taking of fish and wildlife and the designation of the land area as Wilderness are confusing to the public. This Wilderness amplifies the conflict of which motorized uses are appropriate for the various users. By law, the standards vary from one user group to another, such as for subsistence use, general public, hunters and fishermen, special use permittees, Forest Service and other agencies, private land owners, mineral activity, aquaculture and fisheries enhancement. In addition the international treaty with Canada concerning motorized use and commercial traffic, tends to result in an attitude of anything goes on the Stikine River. The direction and execution of existing policy is less than satisfactory at this time, partially due to the many inconsistencies with motorized and mechanized equipment.

The Forest Service changed to using hand tools in 1989 to set an example of Wilderness ethics. This resulted in increased visibility for the public of agency actions, and some concern from the public of what is acceptable. The discrepancies in directional policy has become more apparent. There has been outright opposition to the use of hand tools by the Forest Service by local residents who see it as a threat to the way they have traditionally used the area.

Recreation

Recreation use is concentrated in the river corridor, with several areas acting as magnets. These areas include the hot springs, Twin Lakes, and the Desert. Elimination of existing facilities must weigh the tradeoffs to wilderness values, traditional use, resource protection, administration, and expectations. Cabin maintenance frequency has been adjusted based on monitoring of recreation use and patterns of use.

Touch and go landing areas by wheeled type aircraft have been identified. Float planes also pose a potential safety hazard as they taxi up narrow sloughs with heavy boat traffic, such as to access the hot tubs. A fairly large volume of boat traffic from Canada is illegally crossing the border to access the hot tubs. Commercial helicopter landings at the hot tubs also occur without authorization.

TEBENKOF BAY WILDERNESS

A concern that needs to be monitored in the near future, is the section of VCU 405 which was excluded from the Wilderness so that a road corridor could pass through the area. This road could be built as early as 1990. Changes to the setting are likely to occur both during and after construction. These changes may impact the current and desirable experience levels sought by recreationists in the adjacent wilderness, based on comments already received about past and nearby construction. After construction, changes in management may need to be evaluated. For instance, it may be desirable to move the wilderness boundary up from Alecks Lake to provide a buffer from road activities, or to manage traffic activities.

Several groups of kayakers have pointed out that the Alecks Lake trail has substantial blowdown making the trail undesirable as a portage. The Affleck

Canal trail also has some blowdown making it a difficult portage. Currently, the public map for the area shows these trails as being passable. Now this is being redressed. Management alternatives are for the trails to be managed more intensively, or for the trails not be publicized as easily negotiated portages.

Monitoring results have indicated a need to provide more time for patrolling and monitoring the area. This is indicated by the few sources of monitoring information, increases in use, and the fact there are often several years between official wilderness visits. The only exception is the biannual inspection of the Special Use Recreation Cabin which is a site specific visit.

An archeological excavation of several native cultural sites occurred in 1989. Specific measures and methods were used to minimize any social or physical impacts. No negative feedback has been received from people using the area. Physical impacts were less than anticipated, and a few additional methods were identified, such as temporary planked trails, to incorporate into any future proposals.

TRACY ARM-FORDS
TERROR WILDERNESS

Routine inspections and basic exploration.

WEST CHICHAGOF-YAKOBI
WILDERNESS

Campsites show the expected impact from use by visitors, but the relationship between increasing use and increasing impact is not linear. Impacts are noticeable when sites are used for just a few nights each year. When sites are used moderately or heavily the impact is greater, but not as much as expected given the much higher use. Some lightly used sites show a large amount of impact due to "high impact" groups who cut trees, litter heavily, and burn out vegetation.

Sites used by land-based outfitter-guides show minimal impact even after use by large groups. This may be due to the wilderness ethics of those user groups as well as compliance monitoring accomplished by Forest Service personnel.

INDICATED CHANGES
IN MANAGEMENT
DIRECTION

The results in monitoring indicate the need for the following changes in management direction:

ADMIRALTY ISLAND
WILDERNESS

Campsites which are heavily impacted are rehabilitated by rangers. Volunteers are organized each year for beach cleanups to pick up trash and clean sites. Campsites which are established should not be closed to visitor use since this will cause other areas to be impacted. Continual cleanup of sites and education of user groups is needed. Hunting and fishing groups need to be targeted for education on the impacts they are causing at sites and remote beaches.

Visitation at Mitchell Bay and Pack Creek has received attention in recent environmental analyses. Changes in management direction have been implemented at Pack Creek and are pending for Mitchell Bay (Salt Lake). These changes protect wilderness values by capping guided use and encouraging guides to avoid crowded

spots. Permits are used to monitor visitors at Pack Creek and to protect bears from being impacted by increasing numbers of visitors. Future changes in Mitchell Bay management direction would be implemented in cooperation with Kootznoowoo, Inc. and State agencies who have management responsibility for tidelands and fish and wildlife resources. A Memorandum of Understanding for cooperative management of Mitchell Bay environs, as required by ANILCA Section 506, will be used in managing the area.

Visitor information should be developed to disperse recreationists away from crowded areas or times in Mitchell Bay or Pack Creek, and to highlight the many wilderness opportunities available in other areas or at times other than during the peak visitor seasons.

CORONATION, WARREN,
MAURELLE ISLANDS
WILDERNESS

No change in management direction is indicated other than the need to do more intensive monitoring and investigation of possible trespass activities.

ENDICOTT
WILDERNESS

None.

MISTY FIORDS
WILDERNESS

None, except to continue present monitoring program.

PETERSBURG CREEK
DUNCAN SALT CHUCK
WILDERNESS

In summary, few changes in management have been indicated through monitoring. Certain concerns, such as aircraft overflights, will continue to be informally monitored. If an increase in complaints and comments occurs, more formal monitoring may be needed. Changes in the condition of trails and facilities varies from year to year, and will be dealt with as they occur, such as winter storm damage to the Petersburg Lake Trail. Changes to the setting as a result of proposed management activities outside the wilderness will be monitored and dealt with through the NEPA and public scoping process.

RUSSELL FIORD
WILDERNESS

None to date.

SOUTH BARANOF
WILDERNESS

Continual clean-up of sites and education of user groups is needed. Hunting and fishing groups need to be targeted for education on the impacts they are causing at sites and remote beaches.

Visitor information should be developed to disperse recreationists away from crowded areas and to highlight the many wilderness opportunities available in other areas or at times other than during the peak visitor seasons.

SOUTH PRINCE-OF-WALES
WILDERNESS

No change in management direction is indicated other than the need to continue monitoring the recreation use in the key areas that is quite likely to increase due to the population increases on Prince-of-Wales Island.

STIKINE-LECONTE
WILDERNESS

The results in monitoring indicate the need for the following changes in management direction:

Address the motorized users to be allowed by the various users and agencies. The same needs to be done for all access conveyances. Formulate and issue clear and consistent direction for the above.

Emphasize education to increase awareness of Wilderness use ethics. Efforts should be directed on site as well as off site in the neighboring communities. Non-local users should be made aware of the allowance of motorized uses by Congress in creating this Wilderness, so as to set their expectations at an early stage. This can be incorporated in various brochures, new media and other informational sources.

Increase Forest Service presence and be a very visible "role model". The Forest Service must provide the lead in operation and maintenance activities. Increased presence will increase the accountability of those engaged in illegal or undesired behavior.

Private land parcels should be inventoried as to the potential impact they may have or are having in achieving wilderness standards and goals. Alternatives in dealing with the concerns, then need to be analyzed.

Resolve the remaining trespass cases. Rigorously monitor existing special uses and reinforce behavioral and mechanized standards.

Consider a forum with the Canadian government to review and discuss the International Treaty agreement for the Stikine River. Make each party aware of the others concerns, and explore options for resolving conflicts and needs.

Obtain a clear legal ruling on the jurisdiction of the Wilderness designation for the side channels and sloughs of the Stikine River.

TRACY ARM-FORDS
TERROR WILDERNESS

None.

TEBENKOF BAY
WILDERNESS

Recreation use of the Tebenkof Bay Wilderness is increasing. At the same time areas around the Wilderness are beginning to see signs of other activities, such as road construction. Future management of the area will need to consider the impacts of these external influences to the wilderness resource.

Increased patrols and forest service presence is needed in the future. This would assist in monitoring efforts, determining more accurate use levels and trends, up to date field information such as trails, and getting direct feedback from the users. For instance the portage trails appear to be giving the users a more difficult time than anticipated. Whether this is a function of expectations

based on available literature, or really a serious hardship, needs to be determined before a decision to improve the trails can be made. Either way, the information provided to the public is being updated to reflect the difficulty of the trails, and refine the accuracy of all information.

The archeological value of this area has proven itself to be high. Increased patrols and presence will also be needed to monitor these resources, and public use patterns, so as to maintain the integrity of these sites. Any future excavations, if any, will benefit from the knowledge gained from the previous ones, and from the specific information on user patterns and needs.

WEST CHICHAGOF-YAKOBI WILDERNESS

Continual clean-up of sites and education of user groups is needed. Hunting and fishing groups need to be targeted for education on the impacts they are causing at sites and remote beaches.

Visitor information should be developed to disperse recreationists away from crowded areas and to highlight the many wilderness opportunities available in other areas or at times other than during the peak visitor seasons.

SUMMARY AND CONCLUSIONS

Implementation of existing direction has varied greatly between the various wildernesses. Some areas, such as Admiralty and Misty Fiords Wildernesses have had significant management programs and accomplishments while others have had minimal management activities. Some of the management activities such as fisheries enhancement projects and the authorization of temporary facilities for the taking of fish and wildlife have resulted in administrative appeals by other user groups who view these activities as conflicting with their use or wilderness values.

Monitoring has been minimal in most of the wilderness. The monitoring accomplished has shown some resource damage and severe user conflicts in some of the heavy use areas indicating a need for increased management presence and for public education on minimum impact camping techniques and appropriate use of wilderness. The very limited monitoring in some of the remote wildernesses such as South Prince of Wales and Coronation Island Wildernesses indicates very little use but some resource damage and occupancy trespass is occurring. The areas with the greatest use and most management activities tend to have the greatest need for changes in management direction to resolve user conflicts and preserve the wilderness resource.

In conclusion, there is a need for consistent and specific management direction for all 14 wildernesses that provides for expanded monitoring, increased patrols, and improved wilderness management and which emphasizes wilderness ethics education.

Public involvement for the Wilderness Management Direction Documents and in the Scoping for TLMP Revision has identified a number of concerns about how designated Wilderness in Alaska should be managed. Some members of the public feel that the Tongass Wildernesses should be managed very similar to the way other wildernesses outside of Alaska are managed for wilderness purity. Others feel strongly that Alaska is different and that ANILCA should be interpreted liberally with wilderness being managed to cause the least impact on traditional uses. ANILCA provides many exceptions to the 64 Wilderness Act but also defines Wilderness in Alaska to mean the same as in the 64 Act. ANILCA further directs that wilderness in Alaska shall be managed in accord with the 64 Act except as otherwise expressly allowed in ANILCA. Some of the provisions of ANILCA are requirements that certain activities shall be allowed, while others provide discretionary authority to allow a specific activity. It is within the later area of discretionary activities that policies determining "How pure should wilderness be managed" need to be refined

Concerns - Areas of concern include:

1. Continuation of helicopter use by the public where such use was established prior to ANILCA.
2. Administrative use of helicopters and motorized equipment
3. The use of Chainsaws for administrative maintenance, for subsistence, and by the public related to the taking of fish and wildlife.
4. The establishment of new "Temporary Facilities" for the taking of fish and wildlife.
5. The construction of new public use cabins for public health and safety.
6. The need or desirability of constructing additional trails in wilderness
7. Aquaculture facilities and activities .
8. Capacity limits for specific areas.
9. How many Outfitter-Guide permits should be issued.
10. Visitor Safety
11. Bear and People Management at specific areas such as Pack Creek
12. How much Forest Service presence, such as Wilderness Ranger patrols, is needed or desirable.
13. Inholdings, should some be acquired thru land exchange or purchase?
14. Activities on adjacent lands and waters such as mariculture, floating lodges, float houses, and military installations.

15. Visitor impacts to specific heavy use areas, littering and inappropriate behavior that is inconsistent with wilderness solitude.

16. How to protect cultural resources.

17. How to provide for the continuation of subsistence uses while minimizing the impact on the wilderness resource.

18. That Federal Regulations may need to be promulgated to interpret and implement provisions of ANILCA relative to National Forest Wildernesses and National Forest Monuments.

19. Consistent management direction needs to be completed for the 9 wildernesses without approved Wilderness Management Direction Documents (WMDDs) and the approved WMDDs need to be revised to conform to the Chief's decision on the Stikine-LeConte WMDD Appeal.

Opportunities - The opportunity exists through the TLMP Revision process to establish a framework of consistent management direction with Standards and Guidelines for all 14 wildernesses. The Standards and Guidelines can be responsive to identified management concerns. Implementation Schedules for each of the individual wildernesses can then be prepared to provide specific details for implementation of the Standards and Guidelines.

WILDERNESS AMS APPENDIX

APPENDIX A

1985-86 AMMENDMENT
OF TLMP

The 1985-1986 Amendment to TLMP addressess Wildernese management with the following direction:

a. Land Use Designation I (Wildernese)

(1) Purpose: The original purpose of this designation was to recommend areas for inclusion in the National Wilderness Preservation System. Areas designated by the Congress in 1980 under ANILCA as Wilderness will be managed as directed by the 1964 Wilderness Act, as amended.

(2) Management Implications: ^{5/}

Hunting, fishing and trapping are permitted, subject to State Fish and Game regulations.

These areas were closed to mineral entry on December 31, 1983. Claims with valid existing rights may be accessed and developed.

Scientific studies designated to enhance the wilderness resource may be conducted.

Commercial timber harvesting is not permitted. Beach log salvage, emergency cutting of trolling poles, and subsistence use of timber, where other sources are not available is permitted.

A limited number of new cabins and shelters may be built where necessary to protect the public health and safety.

Public use of snowmachines, motorboats, and airplanes is permitted; however, restrictions may be imposed on a case-by-case basis if such use becomes excessive.

Fish habitat enhancement activities are generally permitted. Wildlife habitat manipulation designed to enhance the wilderness resource may be permitted.

^{5/} See Forest Service Manual (FSM) 2320, Alaeka Region Supplement #34 and completed Wilderness management plans for more detailed management.

New roads are not permitted, except to access valid mining claims.

New water projects can only be authorized by the President.

Access to private, State and Native lands is provided for structures and facilities under special use permit may continue to be maintained. These include the electronic sites listed in Appendix E.

Commercial Outfitter and Guide operations which are compatible with wilderness values may be permitted.

(3) LUD I Variations:

(a) Areas Released from Wilderness Recommendation (LUD I)

These areas were considered by Congress for Wilderness designation during the development of ANILCA. The Congress decided not to include these lands in the National Wilderness Preservation System, thus directing their release from LUD I status. The allocation of these areas to Land Use Designations will be determined through the land management planning process when this Plan is revised. In the interim, these areas will be managed to permit their consideration for the full range of LUDs (including LUD I).

(b) Non-Wilderness National Monument Lands

These lands, although not subject to provisions and requirements of the National Wilderness Preservation System, will be managed to protect objects of ecological, cultural, geological, historical, prehistorical, and scientific interest. Harvesting of timber for commercial purposes is not permitted except as necessary to allow for development of the minerals resource. ANILCA has recognized the mineral development and, although withdrawn from further mineral entry, makes provisions for continued prospecting on lands within 3/4 mile of valid mining claims established by December 2, 1985.

Management Area Direction

1. Introduction

The Tongass is divided into 141 Management Areas (MAs) ranging in size from a few thousand acres to over two million acres (see TLMP map). The Management Areas (MAs) are to provide more localized management direction and to facilitate Plan implementation.

As is illustrated in Figure 2: Management Area Direction Example, the management area direction typically includes:

- a) A brief Management Area Summary, including its number and name, the Value Comparison Units it contains and the LUDs they have been allocated to; and acreages associated with selected forest land characteristics (these acreages are the same as shown in the original Plan);
- b) a Management Direction/Emphasis statement that provides information about conditions and intents that should be considered in undertaking management activities in the Management Area; and
- c) the Management Activities Scheduled for implementation in the second 5 years of TLMP (1985-89 or a future time period spanning the following three decades (1990-2019), along with any pertinent remarks, such as the VCUs for which the management activities are proposed. (optional).
- d) Standards and Guidelines for implementing the scheduled management activities of each Management Area. These are included by reference to applicable NEPA documents resulting from Plan implementation planning activities.

MANAGEMENT AREA SUMMARY

MANAGEMENT AREA NUMBER C11
MANAGEMENT AREA NAME TRACY ARM-FORDS TERROR

VCUS 62.0 63.0 65.0 67.0 78.0
LUDS 1

	NFS ACRES	CFL ACRES
OPERABLE CFL	-----	9,802
HIGH VISUAL SENSITIVITY	50	0
MEDIUM VISUAL SENSITIVITY	0	0
BEACH FRINGE THROUGH 500 FEET	0	0
SPECIAL/UNIQUE AREAS	0	0
BALD EAGLE NESTING AREAS	5,297	1,487
TOTAL ACRES	506,561	11,996

MANAGEMENT DIRECTION/EMPHASIS

THE MAJOR ACTIVITY EMPHASIS WILL BE WILDERNESS AREA MANAGEMENT. THE MINERALS INVENTORY BY USGS HAS BEEN COMPLETED. MINERAL PROSPECTING IS CURRENTLY UNDERWAY IN VCUS 63 AND 65.

MANAGEMENT ACTIVITIES SCHEDULED

	TIME PERIODS	
MGMT ACTIVITIES	1985-89/FUTURE	REMARKS

NO DEVELOPMENT/MITIGATION ACTIVITIES SCHEDULED PRESENTLY

MANAGEMENT AREA SUMMARY

MANAGEMENT AREA NUMBER	C16					
MANAGEMENT AREA NAME	ENDICOTT RIVER					
VCUS	100.0	101.0	102.0	103.0	104.0	105.0

	NFS ACRES	CFL ACRES
OPERABLE CFL	-----	1,320
HIGH VISUAL SENSITIVITY	240	240
MEDIUM VISUAL SENSITIVITY	240	240
BEACH FRINGE THROUGH 500 FEET	0	0
SPECIAL/UNIQUE AREAS	0	0
BALD EAGLE NESTING AREAS	240	240
TOTAL ACRES	102,852	2,166

MANAGEMENT DIRECTION/EMPHASIS

THE MAJOR ACTIVITY EMPHASIS WILL BE WILDERNESS AREA MANAGEMENT.

MANAGEMENT ACTIVITIES SCHEDULED

	TIME PERIODS	
MGMT ACTIVITIES	1985-89/FUTURE	REMARKS

NO DEVELOPMENT/MITIGATION ACTIVITIES SCHEDULED PRESENTLY.

MANAGEMENT AREA SUMMARY

MANAGEMENT AREA NUMBER	C52						
MANAGEMENT AREA NAME	RUSSELL FIORD						
VCUS	352.0	353.0	354.0	355.0	356.0	357.0	358.0
	359.0	360.0	361.0	365.0	374.0		
LUDS	1						

	NFS ACRES	CFL ACRES
OPERABLE CFL	-----	22,000
HIGH VISUAL SENSITIVITY	8,867	8,867
MEDIUM VISUAL SENSITIVITY	1,657	1,657
BEACH FRINGE THROUGH 500 FEET	3,429	3,128
SPECIAL/UNIQUE AREAS	0	0
BALD EAGLE NESTING AREAS	5,372	2,691
TOTAL ACRES	295,252	32,794

MANAGEMENT DIRECTION/EMPHASIS

THIS AREA WILL BE MANAGED AS WILDERNESS

MANAGEMENT ACTIVITIES SCHEDULED

MGMT ACTIVITIES	TIME PERIODS		REMARKS
	1985-89/FUTURE		
STR. HABITAT IMP.	Y	Y	VCU 364 - Wildlife Habitat Improvement
STR. HABITAT IMP.	Y	Y	VCU 366 - Deepen stream between Situk and Mountain Lakes.

MANAGEMENT AREA SUMMARY

MANAGEMENT AREA NUMBER	C22						
MANAGEMENT AREA NAME	ADMIRALTY ISLAND NATIONAL MONUMENT						
VCUS	134.0	135.0	136.0	137.0	138.0	139.0	140.0
	141.0	142.0	143.0	144.0	145.0	146.0	147.0
	148.0	149.0	150.0	151.0	152.0	153.0	154.0
	155.0	156.0	157.0	158.0	159.0	160.0	161.0
	162.0	163.0	164.0	165.0	166.0	167.0	168.0
	169.0	170.0	171.0	172.0	173.0	174.0	175.0
	176.0	177.0	178.0	179.0	180.0	181.0	182.0
	183.0	184.0					

LUDS 1. LUD 1 NON-WILDERNESS NATIONAL MONUMENT LANDS

	NFS ACRES	CFL ACRES
OPERABLE CFL	-----	356,712
HIGH VISUAL SENSITIVITY	108,268	106,608
MEDIUM VISUAL SENSITIVITY	116,798	113,774
BEACH FRINGE THROUGH 500 FEET	165,139	131,845
SPECIAL/UNIQUE AREAS	30,342	15,981
BALD EAGLE NESTING AREAS	46,866	40,831
WILDERNESS ACRES:	937,396	
NON-WILDERNESS ACRES:	17,225 (VCU 144)	
TOTAL ACRES	954,621	
TOTAL ACRES	920,860	536,304

MANAGEMENT DIRECTION/EMPHASIS

THIS AREA IS A NATIONAL MONUMENT AND MOST OF IT IS ALSO WILDERNESS. THE MANAGEMENT PLAN FOR THE MONUMENT, COMPLETED IN NOVEMBER OF 1983, CALLS FOR MAINTENANCE OF THE ISLAND'S WILDERNESS CHARACTER WHILE PROVIDING FOR HUMAN USE AND ENJOYMENT. NORANDA'S GREENS CREEK MINE WILL BE ADMINISTERED. THE CROSS-ISLAND CANOE ROUTE WILL BE MAINTAINED AND IMPROVED TO PORTAGE STANDARDS. NEW TRAILS MAY BE CONSTRUCTED TO ACCESS ALPINE AREAS. TRAILS MAY BE CONSTRUCTED ACROSS SHEE ATIKA'S SELECTIONS ON FOREST SERVICE EASEMENTS TO PROVIDE ACCESS TO ADJACENT NATIONAL FOREST LANDS. THREE SUBSTANDARD PUBLIC RECREATION CABINS WILL BE RECONSTRUCTED ALONG WITH THE PACK CREEK BEAR OBSERVATION TOWER. SEVERAL FISHERIES ENHANCEMENT PROJECTS ARE BEING EVALUATED AND MAY BE CONSTRUCTED AS PERMITTED UNDER SECTION 1315 OF ANILCA. LAND EXCHANGES ARE PENDING WITH SHEE ATIKA TO CORRECT AN ERROR IN ANILCA REGARDING THE FOREST SERVICE RECREATION CABINS ON LAKE FLORENCE AND LAKE KATHLEEN AND WITH OTHER PRIVATE LANDOWNERS WHO WOULD LIKE TO ACQUIRE LANDS OFF ADMIRALTY. THE ANGOON ADMINISTRATIVE SITE WILL BE RETAINED AND UPGRADED.

MANAGEMENT ACTIVITIES SCHEDULED

MGMT ACTIVITIES	TIME PERIODS		REMARKS
	1985-89/FUTURE		
RECREATION FACILITY	Y		VCU 150 - West Florence Cabin Replacement Recon.
RECREATION FACILITY	Y		VCU 157 - Distin Lake Cabin Reconst.
RECREATION FACILITY	Y		VCU 165 - Hasselborg River Cabin Reconst.
TRAIL CONSTRUCTION	Y		VCU 165 - Hasselborg River Trail Reconstruction
RECREATION FACILITY	Y		VCU 135 - Oliver Inlet Tram Repair - State of Alaska Project on State Land Reconst.
RECREATION FACILITY	Y		VCU 157 - Pack Creek Tower Reconst.
TRAIL CONST.	Y		VCU 163 - Mitchell Bay to Thayer Lake Trail Reconst.
TRAIL CONST.	Y		VCU 152 - Pack Creek Trail Reconst.; completed 1985
TRAIL CONST.	Y		VCU 157 - Distin/Thayer Trail Reconst.
TRAIL CONST.		Y	VCU 163 - Kanalku Lake Trail Reconst.
TRAIL CONST.		Y	VCU 147,148,149,150 - Shee Atika Trail
STR. HABITAT IMP.		Y	VCU 149 - Ward Creek Passage (112-17-16)
STR. HABITAT IMP.		Y	VCU 150 - Florence Crk Passage (112-17-25)
STR. HABITAT IMP.	Y		VCU 158 - Fishery Crk Passage (112-17-30)
TRAIL CONST.		Y	Various VCUs - New Trail-locations to be determined.
STR. HABITAT IMP.		Y	VCU 165 - Private Hatchery in Favorite Bay
LAND ADJUSTMENT	Y		VCU 148,150-85 - Shee Atika Land Exchge Analysis
LAND ADJUSTMENT	Y		VCU 142 - Pybus Bay Land Exchange Analysis
ADMIN. FACILITY	Y		VCU 167-85 - Angoon Dwelling Sewer System
ADMIN. FACILITY	Y		VCU 167-88 - Angoon Work Center Design
ADMIN. FACILITY	Y		VCU 167-89 - Angoon Work Center

STANDARDS AND GUIDELINES FOR THIS NATIONAL MONUMENT AND WILDERNESS ARE DISPLAYED IN THE APPROVED ADMIRALTY ISLAND WILDERNESS MANAGEMENT PLAN. THESE STANDARDS AND GUIDELINES SUPERCEDE THE INTERIM MONUMENT MANAGEMENT GUIDELINES WHICH WERE INCLUDED IN THE ORIGINAL TLMP. STANDARDS AND GUIDELINES WHICH ARE SPECIFIC TO THE AREA AROUND MITCHELL BAY HAVE NOT YET BEEN DEVELOPED.

MANAGEMENT AREA SUMMARY

MANAGEMENT AREA NUMBER C38 (HOONAH RANGER DISTRICT PORTION)
MANAGEMENT AREA NAME WEST CHICHAGOF

VCUS 254.0 255.0 259.0
LUDS 1

	NFS ACRES	CFL ACRES
OPERABLE CFL	-----	38,989
HIGH VISUAL SENSITIVITY	25,270	24,888
MEDIUM VISUAL SENSITIVITY	8,802	8,705
BEACH FRINGE THROUGH 500 FEET	59,654	26,728
SPECIAL/UNIQUE AREAS	0	0
BALD EAGLE NESTING AREAS	23,895	12,525
TOTAL ACRES	226,879	69,906

MANAGEMENT DIRECTION/EMPHASIS

THE WILDERNESS WILL BE MANAGED TO PROTECT WILDERNESS VALUES. A MAJOR EMPHASIS AREA FOR THE 85-89 PERIOD WILL BE THE VALIDATION OF EXISTING CLAIMS. FURTHER MANAGEMENT DIRECTION IS SUPPLIED IN W. CHICHAGOF-YAKOBI MANAGEMENT PLAN ENVIRONMENTAL ASSESSMENT, 1985.

MANAGEMENT ACTIVITIES SCHEDULED

MGMT ACTIVITIES	TIME PERIODS		REMARKS
	1985-89/FUTURE		
NONSTR. HABITAT IMP.	Y	Y	VCU 254, 255 - King Salmon Lake stocking
TIMBER STAND IMP.	Y		VCU 220 - Prescribed Burn, Slash Disposal.

MANAGEMENT AREA SUMMARY

MANAGEMENT AREA NUMBER		C38 (SITKA RANGER DISTRICT PORTION)					
MANAGEMENT AREA NAME		WEST CHICHAGOF					
VCUS	263.0	264.0	265.0	266.0	267.0	268.0	269.0
	270.0	271.0	272.0	273.0	274.0	275.0	276.0
	277.0	278.0					
LUDS	1						

	NFS ACRES	CFL ACRES
OPERABLE CFL	-----	38,989
HIGH VISUAL SENSITIVITY	25,270	24,888
MEDIUM VISUAL SENSITIVITY	8,802	8,705
BEACH FRINGE THROUGH 500 FEET	59,654	26,728
SPECIAL/UNIQUE AREAS	0	0
BALD EAGLE NESTING AREAS	23,895	12,525
TOTAL ACRES	226,879	69,906

MANAGEMENT DIRECTION/EMPHASIS

THE WILDERNESS WILL BE MANAGED TO PROTECT WILDERNESS VALUES. A MAJOR EMPHASIS AREA FOR THE 85-89 PERIOD WILL BE THE VALIDATION OF EXISTING CLAIMS. ACCESS FOR THE PLANNED START UP OF MINING ACTIVITIES ON THE CHICHAGOF MINE WILL REQUIRE ANALYSIS DURING THE 85-89 PERIOD. FURTHER MANAGEMENT DIRECTION IS SUPPLIED IN W. CHICHAGOF-YAKOBI MANAGEMENT DIRECTION TO BE COMPLETED IN 1986. IMPLEMENTATION OF THIS DIRECTION AND MONITORING OF WILDERNESS USE WILL BEGIN DURING THE 1985-89 PERIOD. FEASIBILITY STUDIES ON STRUCTURAL FISHERIES ENHANCEMENT PROJECTS WILL BE INVESTIGATED IN SEVERAL VCU'S WHERE OPPORTUNITIES TO CONTRIBUTE TO REGIONAL COOPERATIVE SALMON MANAGEMENT OBJECTIVES EXIST.

MANAGEMENT ACTIVITIES SCHEDULED

MGMT ACTIVITIES	TIME PERIODS		REMARKS
	1985-89/FUTURE		
LAND ADJUSTMENT	Y		VCU ALL - Mineral Exploration Doolth Mt. Claim, L/S Mine Plan of Ops., EXVENCO-2 Plans of Ops. & Special Use Permit Admin.
NONSTR. HABITAT IMP.	Y	Y	VCU 265 - Salmon Stocking (Coop/Aquaculture)
STR. HABITAT IMP.	Y	Y	VCU 263,268,272,275,276,277 - FISH pass construction Goulding River, Goon Dip River, and Falls Creek.
NONSTR HABITAT IMP.	Y		VCU 278 - Suloia Sportfish stocking.

MANAGEMENT AREA SUMMARY

MANAGEMENT AREA NUMBER	C49						
MANAGEMENT AREA NAME	SOUTH BARANOF						
VCUS	329.0	330.0	331.0	332.0	333.0	344.0	345.0
	346.0	347.0	348.0				
LUDS	1						

	NFS ACRES	CFL ACRES
OPERABLE CFL	-----	13,833
HIGH VISUAL SENSITIVITY	28,205	28,205
MEDIUM VISUAL SENSITIVITY	9,070	9,070
BEACH FRINGE THROUGH 500 FEET	47,109	16,981
SPECIAL/UNIQUE AREAS	0	0
BALD EAGLE NESTING AREAS	23,088	10,953
TOTAL ACRES	304,653	49,921

MANAGEMENT DIRECTION/EMPHASIS

THE WILDERNESS WILL BE MANAGED TO PROTECT WILDERNESS VALUES. FISHERY ENHANCEMENT UNDER APPROVED PROGRAMS WILL CONTINUE. FURTHER MANAGEMENT DIRECTION IS SUPPLIED IN THE SOUTH BARANOF WILDERNESS MANAGEMENT PLAN ENVIRONMENTAL ASSESSMENT, 1983. BEACH LOG SALVAGE OPERATIONS MAY TAKE PLACE IN VCUS 329-333 IN BOTH TIME PERIODS.

MANAGEMENT ACTIVITIES SCHEDULED

MGMT ACTIVITIES	TIME PERIODS		REMARKS
	1985-89/FUTURE		
NONSTR. HABITAT IMP.	Y		VCU 330 - Falls Lake Fertilization
NONSTR. HABITAT IMP.	Y	Y	VCU 333 - Salmon Stocking (Coop/Aquaculture)
NONSTR. HABITAT IMP.		Y	VCU 346 - Benzeman Lake Fertilization
STR. HABITAT IMP.		Y	VCU 348 - Ekaterina Creek Fish Passage
NONSTR. HABITAT IMP.		Y	VCU 348 - Lake Ekaterina Fertilization
STR. HABITAT IMP.	Y		VCU 330 - Falls Lake Fish Passage

STANDARDS AND GUIDELINES

SEE THE APPROVED WILDERNESS MANAGEMENT PLAN FOR SOUTH BARANOF

MANAGEMENT AREA SUMMARY

MANAGEMENT AREA NUMBER	S06
MANAGEMENT AREA NAME	TEBENKOF
VCUS	404.0 405.0 405.1 406.0 407.0
LUDS	1-WILDERNESS, LUD 1 RELEASE

	NFS ACRES	CFL ACRES
OPERABLE CFL	-----	22,018
HIGH VISUAL SENSITIVITY	17,864	13,237
MEDIUM VISUAL SENSITIVITY	16,869	9,753
BEACH FRINGE THROUGH 500 FEET	10,198	10,125
SPECIAL/UNIQUE AREAS	0	0
BALD EAGLE NESTING AREAS	9,188	9,188
LUD 1 RELEASE	1,651	
TOTAL ACRES	65,996	39,229

MANAGEMENT DIRECTION/EMPHASIS

THE MANAGEMENT AREA IS AN EXPANSIVE OUTER ISLAND COASTAL BAY, OPEN TO CHATHAM STRAIT AND COMPARABLE TO A SEACOST MARINE ENVIRONMENT. THE AREA ENCLOSES LARGE BAYS, ALECKS LAKE WHICH IS ONE ON KUIU ISLANDS' LARGER LAKES, NUMEROUS FISHING STREAMS, ANCHORAGES AND SMALLER ISLANDS. THE AREA WILL BE MANAGED AS WILDERNESS UNDER THE TEBENKOF WILDERNESS MANAGEMENT PLAN. THE LUD 1 RELEASE AREA WILL BE MANAGED UNDER LUD 1 DIRECTION UNTIL REALLOCATION OR UNTIL AN APPROPRIATE NEPA REVIEW IS ACCOMPLISHED ON PROPOSED ACTIONS OUTSIDE THE ALLOWANCE OF LUD 1.

MANAGEMENT ACTIVITIES SCHEDULED

MGMT ACTIVITIES	TIME PERIODS		REMARKS
	1985-89/FUTURE		
STRUC. HABITAT IMP.	Y		VCU 497 - Wolf Creek Fishway
TRAIL CONST.	Y	Y	VCU 405, 407 - Canoe Portage

MANAGEMENT AREA SUMMARY

MANAGEMENT AREA NUMBER S15
MANAGEMENT AREA NAME PETERSBURG CREEK-DUNCAN SALT CHUCK

VCUS 441.0 445.0
LUDS 1-WILDERNESS

	NFS ACRES	CFL ACRES
OPERABLE CFL	-----	
HIGH VISUAL SENSITIVITY		
MEDIUM VISUAL SENSITIVITY		
BEACH FRINGE THROUGH 500 FEET		
SPECIAL/UNIQUE AREAS		
BALD EAGLE NESTING AREAS		
TOTAL ACRES	47,356	

MANAGEMENT DIRECTION/EMPHASIS

THIS AREA WILL BE MANAGED AS WILDERNESS UNDER THE PETERSBURG CREEK-DUNCAN SALT CHUCK WILDERNESS MANAGEMENT PLAN.

MANAGEMENT ACTIVITIES SCHEDULED

MGMT ACTIVITIES	TIME PERIODS		REMARKS
	1985-89/FUTURE		
NON STRUC. HABITAT IMP.	Y	Y	VCU 441 - As Identified
STRUC. HABITAT IMP.		Y	VCU 445 - Incubation Boxes
LAND ADJUSTMENT	Y	Y	VCU 441 - Land Exchange, Private Land
LAND ADJUSTMENT	Y	Y	VCU 441 - Land Acquisition, Private Land
TRAIL CONST.	Y		VCU 441, 445 - Petersburg Lake-Duncan Salt Chuck Trail

MANAGEMENT AREA SUMMARY

MANAGEMENT AREA NUMBER	S34						
MANAGEMENT AREA NAME	STIKINE-LECONTE						
VCUS	490.0	491.0	492.0	493.0	494.0	495.0	496.0
	497.0	497.1	498.0	499.0	500.0		
LUDS	1-WILDERNESS, LUD 1 RELEASE						

	NFS ACRES	CFL ACRES
OPERABLE CFL	-----	1,399
HIGH VISUAL SENSITIVITY	139,748	38,649
MEDIUM VISUAL SENSITIVITY	5,198	2,512
BEACH FRINGE THROUGH 500 FEET	636	636
SPECIAL/UNIQUE AREAS	10,378	10,140
BALD EAGLE NESTING AREAS	6,776	6,776
LUD 1 RELEASE	1,262	
 TOTAL ACRES	 436,903	 55,319

MANAGEMENT DIRECTION/EMPHASIS

THE STIKINE RIVER, LECONTE BAY AND GLACIER, AND HORN CLIFFS ARE PRINCIPLE FEATURES OF THE MANAGEMENT AREA. ENJOYMENT OF THE LATTER TWO AREAS HAS HISTORICALLY BEEN WATER-ORIENTED. USE OF THE STIKINE TRADITIONALLY IS LAND-ORIENTED WITH WATER ACCESS. THE STIKINE IS A MAJOR RECREATIONAL UNIT IN SOUTHEAST ALASKA. WILDLIFE, WATERFOWL, FISH, AND SCENERY ARE MAJOR OPPORTUNITIES TO BE MANAGED IN A WILDERNESS ENVIRONMENT. THE AREA WILL BE MANAGED AS WILDERNESS UNDER THE STIKINE-LECONTE WILDERNESS MANAGEMENT PLAN. NAVIGABILITY OF THE STIKINE RIVER WILL BE MAINTAINED AS PER U.S.-CANADIAN AGREEMENT. THE LUD 1 RELEASE AREA WILL BE MANAGED UNDER LUD 1 DIRECTION UNTIL REALLOCATION OR UNTIL AN APPROPRIATE NEPA REVIEW IS CONDUCTED ON PROPOSED ACTIONS CONTRARY TO LUD 1 DIRECTION.

MANAGEMENT ACTIVITIES SCHEDULED

MGMT ACTIVITIES	TIME PERIODS		REMARKS
	1985-89/FUTURE		
NONSTRUCT. HABITAT IMP.	Y	Y	VCU 496 - Burning
LAND ADJUSTMENT	Y		VCU 492, 496 - Land Exchange, Private Land
LAND ADJUSTMENT	Y	Y	VCU 492, 496 - Land Acquisition, Private Land
LAND ADJUSTMENT		Y	VCU 491 - State Selections
TRAIL CONST.	Y		VCU 492 - Mallard
TRAIL CONST.	Y		VCU 493 - Twin Lakes
TRAIL CONST.	Y		VCU 495 - Chief Shakes Hot Springs

MANAGEMENT AREA SUMMARY

MANAGEMENT AREA NUMBER K12
MANAGEMENT AREA NAME CORONATION-WARREN

VCUS 564.0 565.0 566.0
LUDS 1

	NFS ACRES	CFL ACRES
OPERABLE CFL	-----	3,880
HIGH VISUAL SENSITIVITY	6,888	4,838
MEDIUM VISUAL SENSITIVITY	1,511	1,511
BEACH FRINGE THROUGH 500 FEET	4,431	3,939
SPECIAL/UNIQUE AREAS	0	0
BALD EAGLE NESTING AREAS	7,152	5,695
TOTAL ACRES	34,899	23,281

MANAGEMENT DIRECTION/EMPHASIS

THIS MANAGEMENT AREA INCLUDES CORONATION ISLAND, ST. JOSEPH ISLAND, WARREN ISLAND, AND SEVERAL GROUPS OF SMALL ISLANDS - MAURELLE ISLANDS, SAN LORENZO ISLANDS, SPANISH ISLAND. IT IS A REMOTE AREA ORIENTED TO THE PACIFIC OCEAN WITH RECREATION POTENTIAL IN THE FORM OF BOATING BETWEEN ISLANDS, SALTWATER, FISHING, HIKING, CAMPING AND BEACH COMBING. CORONATION ISLAND IS THE AREA OF HIGHEST POTENTIAL.

AREA WILL BE MANAGED FOR WILDERNESS PRESERVATION IN ACCORDANCE WITH THE WILDERNESS ACT AND ANILCA. OTHER USES WILL BE ALLOWED ONLY TO THE EXTENT THAT THEY ARE CONSISTENT WITH THIS OBJECTIVE. A WILDERNESS MANAGEMENT PLAN WILL BE COMPLETED WITH STANDARDS AND GUIDELINES IN 1985.

MANAGEMENT ACTIVITIES SCHEDULED

MGMT ACTIVITIES	TIME PERIODS 1985-89/FUTURE	REMARKS
		No development/mitigation activities scheduled

MANAGEMENT AREA SUMMARY

MANAGEMENT AREA NUMBER	K27						
MANAGEMENT AREA NAME	S. PRINCE OF WALES						
VCUS	687.0	690.0	696.0	697.0	698.0	705.0	706.0
	707.0						
LUDS	1						

	NFS ACRES	CFL ACRES
OPERABLE CFL	-----	11,627
HIGH VISUAL SENSITIVITY	738	576
MEDIUM VISUAL SENSITIVITY	1,762	1,422
BEACH FRINGE THROUGH 500 FEET	10,605	6,281
SPECIAL/UNIQUE AREAS	0	0
BALD EAGLE NESTING AREAS	15,077	8,824
TOTAL ACRES	97,033	32,360

MANAGEMENT DIRECTION/EMPHASIS

THE SOUTH PRINCE OF WALES MANAGEMENT AREA CONSISTS OF 97,033 ACRES AND IS LOCATED ON THE SOUTHWESTERN SHORE OF THIS ISLAND. A SERIES OF DRAINAGES DISSECTS THE LANDFORM CREATING A HIGHLY IRREGULAR COASTLINE WITH NUMEROUS FRESHWATER STREAMS AND SMALL INLAND WATER BODIES. THE ROCKY COASTLINE FACES DIXON ENTRANCE AND IS SPECTACULAR IN ITS PICTURESQUE SETTING. NO RECREATIONAL FACILITIES CURRENTLY EXIST IN THE AREA. DISPERSED RECREATIONAL USE HAS BEEN CENTERED FROM OCEAN GOING WATERCRAFT.

THIS AREA WILL BE MANAGED FOR WILDERNESS PRESERVATION UNDER THE WILDERNESS ACT AND ANILCA. OTHER USES WILL BE ALLOWED ONLY TO THE EXTENT THEY ARE CONSISTENT WITH THIS PARAMOUNT OBJECTIVE OR SUBJECT TO VALID EXISTING RIGHTS. A MANAGEMENT PLAN FOR THE AREA WILL BE COMPLETED IN 1985. THIS PLAN WILL PROVIDE A SPECIFIC MANAGEMENT PRESCRIPTION FOR THE AREA.

MANAGEMENT ACTIVITIES SCHEDULED

MGMT ACTIVITIES	TIME PERIODS		REMARKS
	1985-89/FUTURE		
MINERALS ACTIVITY	Y		Validity examination of existing mining claims.
NONSTRUC. HABITAT IMP.		Y	VCU 705 - Brownson Bay Fall fish pass, 1992
STRUC. HABITAT IMP.		Y	VCU 687 - Klakus Lake Falls fish pass, 1990

MANAGEMENT AREA SUMMARY

MANAGEMENT AREA NUMBER		K43					
MANAGEMENT AREA NAME		MISTY FIORDS					
VCUS	730.0	754.1	755.0	769.0	770.0	771.0	772.0
	773.0	774.0	775.0	776.0	777.0	778.0	779.0
	780.0	781.0	782.0	783.0	784.0	785.0	786.0
	787.0	788.0	789.0	790.0	791.0	792.0	793.0
	794.0	795.0	796.0	797.0	798.0	799.0	800.0
	801.0	802.0	803.0	808.0	809.0	810.0	811.0
	812.0	813.0	814.0	815.0	816.0	817.0	818.0
	819.0	820.0	821.0	822.0	823.0	824.0	825.0
	826.0	827.0	828.0	829.0	830.0	831.0	832.0
	833.0	834.0	835.0	836.0	837.0	838.0	839.0
	840.0	841.0	842.0	843.0	844.0	845.0	846.0
	847.0	848.0	849.0	850.0	851.0	852.0	853.0
	854.0	855.0	856.0	857.0	858.0	859.0	860.0
	861.0	862.0	863.0	867.0			
LUDS	1. 1 NON-WILDERNESS NATIONAL MONUMENT LANDS						

	NFS ACRES	CFL ACRES
OPERABLE CFL	-----	202,151
HIGH VISUAL SENSITIVITY	126,064	64,048
MEDIUM VISUAL SENSITIVITY	128,342	54,220
BEACH FRINGE THROUGH 500 FEET	45,963	31,461
SPECIAL/UNIQUE AREAS	0	0
BALD EAGLE NESTING AREAS	77,675	51,656
TOTAL ACRES	2,284,560	569,675

MANAGEMENT DIRECTION/EMPHASIS

MISTY FIORDS MANAGMENT AREA CONTAINS ABOUT 2.2 MILLION ACRES OF LAND. IT WAS DESIGNATED A NATIONAL MONUMENT BY PRESIDENTIAL PROCLAMATION IN DECEMBER 1978. AND ALL BUT 152,610 ACRES AROUND THE QUARTZ HILL AREA WAS ESTABLISHED AS WILDERNESS IN ANILCA IN 1980. THIS WILDERNESS EXCLUSION AREA REMAINS A PART OF THE MONUMENT.

THIS MANAGEMENT AREA EXTENDS FROM THE CANADIAN BORDER AND INCLUDES BOTH THE MAINLAND AND THE EAST SIDE OF REVILLA ISLAND. A VARIETY OF VEGETATIVE TYPES AND LANDFORMS ARE EXHIBITED DUE TO THE VAST AREA ENCOMPASSED. EXISTING RECREATIONAL IMPROVEMENTS INCLUDE FOURTEEN PUBLIC USE CABINS AND THREE SHELTERS LOCATED ADJACENT TO FRESHWATER LAKES OR SALTWATER BAYS. APPROXIMATELY 25 MILES OF TRAILS PROVIDE ACCESS. A MARINE MOORING BUOY SYSTEM ENCIRCLING REVILLAGIGEDO ISLAND PROVIDES SAFE BOAT ANCHORAGE FOR WATERCRAFT USING THIS AREA VIA BEHM CANAL.

THE WILDERNESS PART OF THE AREA WILL BE MANAGED FOR WILDERNESS PRESERVATION IN ACCORDANCE WITH A MANAGEMENT PLAN CURRENTLY BEING FINISHED. OTHER USES WILL BE ALLOWED ONLY TO THE EXTENT THEY ARE CONSISTENT WITH THIS PARAMOUNT OBJECTIVE OR SUBJECT TO VALID EXISTING RIGHTS. NO NEW MINING CLAIMS MAY BE ESTABLISHED.

MANAGEMENT ACTIVITIES SCHEDULED

MGMT ACTIVITIES	TIME PERIODS		REMARKS
	1985-89/FUTURE		
RECREATION FACILITY	Y		VCU 769 - Replace Point Alava anchor buoy; 1985
RECREATION FACILITY	Y		VCU 773 - Ella anchor buoy placement; 1985
RECREATION FACILITY	Y		VCU 803 - Punchbowl Lake Shelter Construction; 1986
RECREATION FACILITY	Y		Anchor buoy placement; 1987
RECREATION FACILITY	Y		VCU 773 - Ella Bay Cabin Construction; 1987
RECREATION FACILITY	Y		VCU 773 - Ella Lake Shelter Construction; 1987
RECREATION FACILITY	Y		VCU 820 - Checats Lake Shelter construction; 1987
RECREATION FACILITY	Y		VCU 834 - Humpback Bay Shelter construction; 1988
RECREATION FACILITY	Y		VCU 791 - Sakes/Fitzgibbon Cabin Construction; 1988
RECREATION FACILITY	Y		VCU 846 - Storehouse #3 cabin reconstruction; 1988
RECREATION FACILITY	Y		VCU 771 - Princess Bay Cabin construction; 1988
RECREATION FACILITY	Y		VCU 808 - Davis River Cabin construction; 1988
RECREATION FACILITY	Y		VCU 791 - Sakes/Fitzgibbon anchor buoy placement; 1988
RECREATION FACILITY	Y		VCU 821 - Winstanley anchor buoy placement; 1988
RECREATION FACILITY	Y		VCU 771 - Princess Bay anchor buoy placement; 1988
RECREATION FACILITY	Y		VCU 808 - Davis River anchor buoy placement; 1988
RECREATION FACILITY	Y		VCU 846 - Halibut Bay anchor buoy placement; 1988
RECREATION FACILITY		Y	VCU 793, 794, 796 - Construct five trail shelters along Chickamin Trail; 1990
RECREATION FACILITY		Y	VCU 817 - Wilson Lake overflow cabin construction; 1990
RECREATION FACILITY		Y	VCU 861 - Tree Point Lighthouse (feasibility study); 1990

RECREATION FACILITY	Y	VCU 754 - Mirror Lake Cabin construction; 1991
RECREATION FACILITY	Y	VCU 803 - Punchbowl Shelter construction; 1991
RECREATION FACILITY	Y	VCU 834 - Humpback Lake Cabin construction; 1992
TRAIL CONST.	Y	VCU 834 - 1.5 miles Humpback reconstruction; 1985
TRAIL CONST.	Y	VCU 773 - 2.3 mile Ella Lake reconstruction; 1985
TRAIL CONST.	Y	VCU 801 - Nooya Bridge construction; 1985
TRAIL CONST.	Y	VCU 801 - 0.1 miles Nooya Trail reconstruction; 1986
TRAIL CONST.	Y	VCU 803 - 0.1 miles Punchbowl Trail reconstruction; 1986
TRAIL CONST.	Y	VCU 834 - 1.5 miles Humpback reconstruction; 1988
TRAIL CONST.	Y	VCU 775 - 0.4 miles Manzanita Bay reconstruction; 1988
TRAIL CONST.	Y	VCU 821 - 0.5 miles Winstanley reconstruction; 1988
TRAIL CONST.	Y	VCU 793, 794, 796 - Survey and design 62.5 miles, Chickamin Trail; 1988
TRAIL CONST.	Y	VCU 754, 755 - 25 miles Gokachin Canoe Route survey; 1988
TRAIL CONST.	Y	VCU 754, 755 - 4.5 miles reconstruction Gokachin portages; 1989
TRAIL CONST.	Y	VCU 754, 755, 773, 775 - 23 miles construction Gokachin; 1989
TRAIL CONST.	Y	VCU 754 - 0.4 miles Low Lake construction; 1991
TRAIL CONST.	Y	VCU 820 - 0.2 miles Checats construction; 1991
TRAIL CONST.	Y	VCU 826 - 0.5 miles Bakewell construction; 1991
TRAIL CONST.	Y	VCU 836 - 0.1 miles reconstruction, Hugh Smith; 1993
NONSTRUC. HABITAT IMP.	Y	VCU 836 - Hugh Smith Lake bio enhancement, 120 acres; 1985
NONSTRUC. HABITAT IMP.	Y	VCU 826 - Bakewell/Badger Lake bio enhancement, 140 acres; 1985-89
NONSTRUC. HABITAT IMP.	Y	VCU 827 - Badger Lake fertilization, 100 acres/year; 1992-94
NONSTRUC. HABITAT IMP.	Y	VCU 836 - Hugh Smith stocking, 120 acres; 1987-90
STRUCT. HABITAT IMP.	Y	VCU 838 - Martin River fishpass; 1988

STRUCT. HABITAT IMP.	Y		VCU 839 - Manzanita Creek fishpass
STRUCT. HABITAT IMP.		Y	VCU 839 - Dicks Creek fishpass, 10 acres; 1990
STRUCT. HABITAT IMP.		Y	VCU 837 - Red River fishpass; 1990
STRUCT. HABITAT IMP.		Y	VCU 773 - Ella Creek fishpass; 1992
STRUCT. HABITAT IMP.		Y	VCU 831 - Sikes Creek fishpass; 1993
STRUCT. HABITAT IMP.		Y	VCU 793 - Choca Creek fishpass; 1994
MINERALS ACTIVITY	Y	Y	Annual administration of mining claims, common minerals, leases, operating plans, and claim validity examinations
ADMIN. FACILITY		Y	Barge field station construction; 1995

STANDARDS AND GUIDELINES

A MANAGEMENT PLAN IS TO BE COMPLETED IN 1985 AND WILL PROVIDE DETAILED DIRECTION FOR ALL OF THE MONUMENT AREA EXCEPT THE EXCLUSION AREA COVERED IN THE QUARTZ HILL MINE DEVELOPMENT EIS (WHICH IS TO BE COMPLETED IN 1986).

APPENDIX B

APPROVED DIRECTION FOR INDIVIDUAL WILDERNESSES Management direction has been approved for the Admiralty Island National Monument Wilderness, Endicott Wilderness, South Baranof Wilderness, Tracy Arm-Fords Terror Wilderness, and the Stikine-LeConte Wilderness. Following is the management direction from these approved plans as modified by the Chief's decision on the Stikine-LeConte Appeal:

ADMIRALTY ISLAND NATIONAL MONUMENT

The Wilderness management direction for Admiralty Island National Monument Wilderness was approved by the Regional Forester on November 22, 1983 and Amended on August 5, 1985. Following is the amended direction currently in effect

Wilderness

This direction centers on maintaining an enduring system of high quality wilderness, while providing for public access and use consistent with ANILCA. Uses will be regulated or restricted only where a specific use is not in accordance with applicable law or where allowance of such use would result in significant resource damage.

Management of wilderness will follow the Wilderness Management Guidelines, which were formulated through the Recreation Opportunity Spectrum (ROS) system. Formulation of the guidelines is documented in the Wilderness/Recreation Specialist Report prepared for the planning process. A description of these guidelines is found in Appendix C. (Note: the complete copy of the Admiralty Island National Monument Wilderness Management Direction as amended is on file at the Forest Supervisor's Office, Chatham Area, TNF.)

Existing information is not adequate to completely resolve the issue of how much and what types of use the Monument can accommodate without degrading resource values. Documentation of visitor use is available only for the public recreation cabins and the outfitter guide under permit. The Forest Service will, however, be monitoring the use and condition of resources throughout the area, focusing on the Mitchell Bay, Seymour Canal, Pack Creek, and Admiralty Lake units, where public interest and use are high. These monitoring activities will insure that the monument's resource values are not degraded through overuse. Should monitoring indicate the need for a change in the amount or kinds of activities allowed, the need could be addressed through amendments to the Admiralty Plan or in the 1990 revision process. It must be remembered, however, that ANILCA affirmatively provides continued access and use of the monument. Any restrictions on access and use must be in response to clearly demonstrated needs.

The greatest amount of public interest has been expressed over the Mitchell Bay unit. Because of the special interests and responsibilities of the State of Alaska, Kootznوو, Inc., and the Forest Service, a cooperative Angoon - Mitchell Bay Unit Plan is proposed for the Mitchell Bay unit. This Plan will allow both cooperators and the public to resolve the special management issues of the Mitchell Bay unit, with each cooperator making decisions appropriate to the agency under existing State and Federal laws.

Recreation

- a. Commercial outfitter guide special use permits may be issued when the services to be offered by the permittee are necessary to meet public needs while maintaining the wilderness resource and unique monument values. These

operations shall be administered as to be harmonious with wilderness use by those visitors who do not employ such a service. Limitations on party size and other reasonable regulations may be made a part of the permit in order to avoid conflicts with other users or when necessary to prevent significant damage to resources. Commercial outfitter guide use of the monument will be monitored to insure that permittees comply with the permit requirements and that permit requirements are effective in avoiding conflicts with other users and preventing significant resource damage.

- b. Minimize impacts to wilderness by reducing the number of signs. Encourage "no trace camping" techniques. An education program on "no trace camping" techniques will be developed.
- c. As part of ongoing work, develop an inventory of key public recreation sites to determine current wilderness conditions. This will provide for necessary cleanup, consideration of temporary facility permit applications, and visitor use information needs. Impacts will be monitored at frequently used sites. Included in this work will be identification of areas which possess unusual environmental, educational, recreational, and scientific values.
- d. Maintain existing public cabins and shelters at present or improved condition.
- e. No additional public recreation cabins or shelters are planned at this time. The option remains open to consider additional cabins and/or shelters for health and safety purposes as prescribed in ANILCA.
- f. Maintain existing trails. Emphasize a primitive experience and use native building materials for bridges and soil stabilization. The trails linking the Cross Admiralty Canoe Route will be maintained to a higher standard than other trails because of their use for canoe portaging.
- g. Investigate the potential and need for development of two or three new primitive trails. Consideration will be given to cross-country ski/snowshoe trails and alpine access. A separate planning process will be used to determine need and locations.
- h. Reconstruct the Mitchell Bay to Thayer Lake and/or Kanalku Bay to Kanalku Lake trails. Both trails, which are part of the monument's trail system, are in need of major work to protect resource values, such as sensitive soils, and to restore the trails to a usable condition.
- i. Actively encourage visitors to camp on existing popular sites that have durable soil and vegetation. This will be done through personal contacts and public information, including a recreation brochure which will be prepared to provide information to visitors. The brochures will be designed to provide recreation information and guide visitor use of Admiralty.

With the help of user groups, develop no trace camping programs to encourage dispersal of camping and the use of durable campsites. Where, despite efforts to disperse use, monitoring shows that use has concentrated to the point that soils, vegetation, or esthetics are impacted, campsites may be developed. Development of campsites not specifically approved in this plan requires the approval of the Regional Forester. There are, however, a few popular-use areas where camping cannot be adequately dispersed. To minimize damage to the resources, including esthetics for the user, some campsites may need to be developed and the public use directed to these sites. In the Admiralty Lakes Management Area, development of three campsites is approved. Development of campsites may include leveling of tent pad areas no more than 10 feet by 10 feet using hand tools and construction of native stone fire circles if necessary to prevent duff fires. No other developments or improvements are permitted.

Wildlife

- a. Continue coordination with other agencies for management of the wildlife resource. Coordination with the Alaska Department of Fish and Game will focus principally on habitats and impacts to game animals. Coordination with U.S. Fish and Wildlife Service will focus on the monitoring and protection of bald eagles and their habitats. Coordination will be maintained with the National Marine Fisheries Service to guard against user impacts to marine mammals.
- b. Increase inventory of wildlife habitat and use as funding and administrative constraints permit. Identify sensitive or unique habitats, such as wetlands, seal and sea lion rookeries, bald eagle nest sites, etc.
- c. Since most bears become "problem bears" as a result of improper food storage and improper waste disposal, the Forest Service and the State of Alaska will exercise their various authorities to reduce or eliminate improper waste disposal sites. The Forest Service and the State of Alaska will cooperatively address any bear problems. The lead agency will vary depending on circumstances. Relocating bears is not a viable option in dealing with individual problem bears because of their homing patterns and because undesirable behavior patterns generally continue, wherever the bear may be. State regulations provide for the taking of game "in defense of life or property" by any person.
- d. Habitat improvement projects must have, as their objective, enhancement or restoration of the wilderness resource where affected by past human activities including effects on traditional subsistence use of wildlife resources.
- e. Monitor use as it impacts sensitive or unique habitats and game and special interest wildlife species (deer, bear, eagles, humpback whales, seals, sea lions and waterfowl) as funding and administrative constraints permit.
- f. Continue cooperation with other State and Federal agencies conducting wildlife and habitat studies and research. These programs often require temporary onshore facilities, use of motorized equipment, capture of the studied species and, in some cases, tagging or other alteration of the study species appearance. Subject to reasonable regulations, these would be allowed. "Hands-off" research techniques will be promoted wherever possible and emphasis will be placed on studying wildlife and habitats in a manner most compatible with wilderness values.
- g. Provide for increased wildlife viewing through development of public information for monument users which would provide information, safety tips, a map of species distribution, etc.

Fisheries

ANILCA Section 1315(b) authorizes fisheries research, management, enhancement, and rehabilitation activities within National Forest Wilderness Areas.

- a. Section 507(a) of ANILCA mandates a cooperative fisheries planning process involving the State of Alaska, the Forest Service, and the non-profit aquaculture associations. The process will examine fisheries enhancement needs and opportunities Forest-wide, and will explore interrelationships between fisheries enhancement opportunities and other resources uses such as wilderness or other recreation uses. The process is scheduled to begin during 1983 and be completed by fall of 1984.
- b. Decisions to allow or not to allow specific fisheries enhancement projects in designated wilderness will be made in compliance with the National Environmental Policy Act (NEPA) process. There will be an ample opportunity for the public to participate in this process.
- c. Prior to completion of ANILCA 507(a) process:
 1. Allow consideration of development of permanent aquaculture facilities such as hatcheries, fish passes, and spawning channels

in development oriented areas. Greens, Kathleen, Ward, Florence, and Favorite Creeks would be considered in conjunction with other planned development activity. Proposals will be evaluated on a case-by-case basis. In areas currently in a pristine condition allow activities that retain wilderness values, such as log jam removal, temporary facilities for inventory, scientific study, egg taking, temporary egg incubators, etc.

2. Coho lake stocking would be considered when consistent with ANILCA aquaculture objectives.
 3. Stocking of sportfish would generally be employed only to reestablish indigenous stocks depleted by human influences. Habitat improvement for sportfish may be permitted, but with visual constraints to maintain wilderness value. Stocking of indigenous species in currently barren waters may be considered.
 4. Every effort will be made to minimize the visual and noise impact of a project.
 5. Barrier removal will favor tunneling, using natural appearing steps in the rock or manufactured structures made in a manner that blends with the environment.
- d. Where marginal populations of fish (such as steelhead) exist, care will be taken to avoid publicizing or otherwise attracting visitors during the time they are in the system.

Cultural Resources

- a. Inventory - develop an action plan for systematic inventory and evaluation to be conducted on an ongoing basis.
- b. Surveillance - provide surveillance and enforcement at highest practical level. Vigorously prosecute apprehended vandals. The public will be encouraged to report vandalism.
- c. Allow no potentially adverse activity on 14(h)(1) sites without agreement from Sealaska Corporation. Continue to work with Sealaska Corporation for interim management of 14(h)(1) sites.
- d. Evaluate CCC projects and other historic sites remaining on the island for eligibility for the National Register of Historic Places. If the properties are determined to be eligible, develop a memorandum of understanding with the National Advisory Council on Historic Preservation addressing restoration, reconstruction and maintenance of structures and trails.
- e. With respect to historic structures other than those constructed by the CCC, stabilize only to arrest decay provided the structures meet the following criteria: 1) eligible for the National Register of Historic Places; 2) where deterioration constitutes an "adverse effect" as defined by the National Advisory Council on Historic Preservation; and 3) where stabilization does not impair wilderness value. Restoration efforts must conform to cultural resource management objectives.
- f. Excavation - Excavate sites only as a last resort to protect data as funding and administrative constraints permit.
- g. Develop informational displays, educational materials, and interpretive signing for off wilderness locations. Within wilderness place regulatory signs only at sites where vandalism has occurred or is expected to occur.

Displays

Juneau Centennial Center, Angoon Monument Office

Education

Develop two interpretive slide presentations and other public informational materials.

**Administrative
Facilities**

1. Continue operation of existing Forest Service (FS) administrative site and office in Angoon as funding and administrative constraints permit.
2. Retain FS Administrative Cabin in Seymour Canal and continue under special use permit one Alaska Department of Fish and Game (ADF&G) cabin in Hood Bay.
3. No new permanent facilities.

**Administrative Use
of Motorized Activities**

To the extent possible, the Forest Service will minimize the impacts of its activities on the wilderness resources and visitors. In developing project plans, the Monument Manager will, as a minimum, use the following direction.

1. **Aircraft.** Fixed wing and rotary wing (helicopters) aircraft may continue to be used for administering the National Monument/Wilderness. Aircraft will be used in a manner to avoid adverse effects on the wilderness and visitors. To the extent possible, existing air routes will be used. Low flights will be avoided. Repetitive circling will be avoided. Work will be planned to minimize the number of aircraft flights.
2. **Outboard Motors.** Outboard motors are authorized for gathering of firewood for public recreation cabins and transportation of work crews and equipment on Alexander, Distin, Florence, Hasselborg, Jims, Kathleen and Thayer Lakes. Use of outboard motors by Forest Service employees for off-duty recreation is not permitted on freshwater lakes. Outboard motors will be 10 horsepower or less.
3. **Chainsaws.** Chainsaws may be used for trail maintenance and firewood cutting from September 1 through July 1 each year. Chainsaws may be used for trail construction/reconstruction projects that have been approved in this plan.
4. **Generators and other motorized equipment.** Generally, generators and other motorized tools will not be used. The only exception would be for construction projects that have been approved in this plan. Generators and other motorized tools will not be used at field camps or administrative sites within the wilderness.
5. **Exceptions.** Any use of motorized equipment that does not conform to the above policies requires approval of the Regional Forester.

**Special Use Permit
Cabins**

1. No additional permits to construct cabins for recreational uses.
2. As opportunities occur, consider conversion of special use private cabins to public use.
3. Continue existing permits for existing facilities and uses to present permittees. Enlargement of existing facilities or change of use is not permitted.
4. Existing special use permits may be transferred at the election or death of the original permittee. The original permittee is the one of record on December 2, 1980. This is a transfer of the permit in effect on December 2, 1980; not the issuance of a new special use permit. The transfer may be accomplished following the normal procedures except that the special use permit will be amended to change the name of the permittee instead of issuing a new permit. The amendment will also contain the following tenure clause:
 - a. This permit is non-transferable, and a new permit will not be issued to any subsequent owner of the improvements or to any person holding any interest in the improvements.
 - b. If the present permittee herein ceases to have personal need for, or make personal use of, the site for the purpose for which the

permit is issued, this permit will terminate and the structures on the area shall be disposed of as prescribed by the permit or made available for public use if in suitable condition.

- c. No additional improvements shall be constructed without prior written approval of the Forest Service.

Chainsaws

Chainsaws and other motorized equipment use by special use permittees and visitors will continue to be allowed in accordance with the allowed uses prescribed in ANILCA section 1316. The Monument Manager will encourage users to minimize their use of this equipment and may recommend restrictions if necessary to reduce the effects on other users' solitude or to further protect the wilderness resource.

Floats

The State of Alaska, Department of Transportation and Public Facilities (DOTPF), constructs floats for use by commercial and recreational boaters as part of the State Waters and Harbors Program. It is recognized that due to hazardous waters and rapidly changing weather conditions in Southeast Alaska that additional anchor buoys may be required for public health and safety in the waters adjacent to Admiralty Island Wilderness Area. Public involvement during the Admiralty planning process was used to formulate the Forest Service policy favoring using single mooring buoys to enhance boating safety adjacent to wilderness boundaries. Floats tend to concentrate use which reduces the wilderness sense of solitude and self reliance. The range of Forest Service preferred options for floats follows:

1. Generally favor use of single mooring buoys over large floats. Consider, after public review, adding a few single mooring buoys in more exposed anchorages or where poor holding bottoms exist.
2. Generally favor development of floats only in areas that have been significantly modified by past human activity such as logged areas or old canneries, etc. This would encourage consideration of floats in areas to be managed as Semi-Primitive Motorized and Semi-Primitive Non-Motorized Recreation Opportunity Spectrum (ROS) classes. (For further discussion of ROS classes and their management, see Appendix C).
3. All proposals will be reviewed for compatibility and protection of upland resources such as eagle nesting, cultural sites, etc., which could be adversely affected by concentration of use and activity.
4. Look first to areas outside of wilderness to provide for refuge float needs when feasible.

Three floating camps (wannigans) are currently located within or adjacent to the monument. Any facilities above mean high tide and mean low tide are under the jurisdiction of the State of Alaska, Department of Natural Resources. Anchorage below mean low tide is under the jurisdiction of the Army Corps of Engineers. Wannigans and other floating structures are generally perceived as an adverse impact to wilderness, particularly where they are permanently anchored in popular sheltered anchorages. Work with the State of Alaska and the Army Corps of Engineers to develop compatible policies on the location of floating structures within or adjacent to the monument.

Beach Log Salvage

ANILCA Section 1315(f) allows the Secretary of Agriculture to permit salvage of logs from coastlines. A Memorandum of Understanding (MOU) exists between the Alaska Department of Natural Resources and the USDA Forest Service. Its

purpose is to provide for the removal and utilization of beached logs on adjoining areas of National Forest and State lands. In addition to the conditions prescribed in the MOU, the following direction will apply to beach log operations on the Admiralty Island National Monument Wilderness Area:

Allow salvage of beached timber under timber salvage sale contracts. Contracts will require that salvage operations be conducted from the water without roads or use of vehicles on uplands. Temporary use of motorized or mechanical equipment will be allowed where necessary, providing long-term adverse effects will not result.

Subsistence

The Forest Service has primary responsibility for implementation of the provisions of Title VIII of ANILCA for fish and wildlife habitat and non fish and wildlife subsistence resources on National Forest lands such as timber, berries, etc. The Forest Service also has an interagency role in monitoring the State of Alaska implementation of subsistence management. This role is spelled out in the Section 806 Subsistence Monitoring Guidelines established by the Bureau of Land Management, National Park Service, Fish and Wildlife Service, Forest Service, and Alaska Department of Fish and Game.

ANILCA Title VIII, Subsistence Management and Use, provides a policy framework designed to insure the continuation of the opportunity of rural Alaskan residents to engage in a subsistence way of life. ANILCA Title VIII and Alaska Statute 5AAC99.010 define the relevant Federal and State of Alaska regulatory and administrative roles necessary to accomplish the purposes of Title VIII of ANILCA and the Alaska State Subsistence laws. The State of Alaska has the primary responsibility for the management and allocation of fish and wildlife on the public lands for subsistence uses. State of Alaska statute provides the mechanism of the State of Alaska to exercise such authority with respect to subsistence uses in accordance with the requirements of Title VIII of ANILCA. State of Alaska subsistence allocations are a part of the State's overall allocation process carried out by the Boards of Fisheries and Game.

Section 810 of ANILCA requires that Federal land managers, "In determining whether to withdraw, reserve, lease or otherwise permit the use, occupancy or disposition of public lands under any provision of law authorizing such actions, the head of the Federal agency having primary jurisdiction over such lands or that person's designee shall evaluate the effect of such use, occupancy or disposition on subsistence uses and needs, the availability of other lands for the purposes sought to be achieved, and other alternatives which would reduce or eliminate the use, occupancy or disposition of public lands needed for subsistence purposes."

The evaluation of effects on subsistence uses as called for in Section 810 of ANILCA has been an integral part of the Admiralty National Monument planning process. The conclusion resulting from the evaluation and analysis of all Management Area alternatives is a finding that no significant restriction of subsistence uses will result from implementation of this plan.

The following statements document current plans of the Alaska Department of Fish and Game and the Forest Service for monitoring subsistence.

Forest Service

1. Share information and work cooperatively with ADF&G in the design and collection of information.
2. Develop an Information and Education (I&E) program to inform visitors of ongoing subsistence activities.
3. The effect of new Forest Service management activities on subsistence uses will be evaluated in accordance with Section 810 of ANILCA.
4. Cutting green trees will be by permit. There will be no restrictions on cutting dead or down trees. This use will be monitored.

Private Land

- a. Private land ownership authorized under ANILCA may continue.
- b. Acquisition opportunities may be pursued in accordance with the provisions of ANILCA and other applicable law.

Temporary Facility
(Camp) Permits

ANILCA Section 1316(a) provides for the issuing of permits for the "...establishment of temporary campsites, tent platforms, shelters, and other temporary facilities...." These are to be permitted in relation to the taking of fish and wildlife where temporary facilities are "...directly and reasonably related to such activities." Other provisions require "...such facilities and equipment shall be constructed, used, and maintained in a manner consistent with the protection of the area in which they are located."

Section 1316(b) states:

"Notwithstanding the foregoing provisions, the Secretary may determine, after adequate notice, that the establishment and use of such new facilities or equipment would constitute a significant expansion of existing facilities or uses which would be detrimental to the purposes for which the affected conservation system unit was established, including the wilderness character of any wilderness area within such unit, and may thereupon deny such proposed use or establishment."

The Alaska Land Use Council adopted direction of February 8, 1982, defining the facilities authorized by Section 1316 to mean tent platforms, caches, and shelters (which is a lean-to having one open side, but does not include cabins).

It has been determined through the planning process that location of new facilities in certain areas would constitute a significant expansion of existing facilities that would degrade the wilderness character.

This determination is based on several factors including the number of structures currently under permit, the limited number of available sites, the high potential for damage to cultural sites in some areas, the overall potential for degradation of wilderness values such as solitude, and to avoid occupying and modifying all usable campsites within the wilderness which would thereby be detrimental to the purposes for which the unit was classified a monument wilderness.

Closed Areas

Under Section 1316(b) of ANILCA, the following areas will be closed to temporary facilities:

Flaw Point (North side of Mole Harbor) to Shortfinger Point encompassing the islands of Upper Seymour Canal: This area contains 14 special use permit cabins, the Windfall Harbor public shelter, the monument administrative cabin, and the Seymour Canal public cabin (owned by the State of Alaska). Location of additional facilities would degrade the wilderness character.

Pack Creek Drainage. The Pack Creek drainage is closed to bear hunting. It currently contains one mile of trail, the bear observation tower, and Stan Price's structures and other developments. Locating additional facilities in the area would degrade the wilderness character and adversely effect public use.

Young Point to Station Point. The area contains four special use cabins and is heavily used by day hunters and anglers from Juneau. Location of additional facilities in this area would be a significant expansion of existing use which would degrade the wilderness values of the area.

Marble Bluffs to Woody Point. This area is heavily used by day hunters and anglers operating out of Angoon. The area contains a number of facilities located on private land, a number of cultural sites, and three current special use permit facilities. Locating additional facilities would degrade the wilderness character and could restrict public access and use of the area. A high potential for damage to cultural sites would exist because of their locations in areas accessible for temporary camps.

The remainder of the monument will be open to application for temporary facilities. The following criteria will be used:

- a. Criteria for locating temporary facilities within Admiralty Wilderness
 1. They shall be located so as not to displace or compete with existing public uses where feasible.
 2. They shall be located away from the vicinity of existing private or public cabins.
 3. They shall be located on sites that are not currently popular camp sites.
- b. Conditions of the permit
 1. The time of occupancy will coincide with the local State hunting or fishing season for the species for which the temporary facility is being used.
 2. At the end of the specified occupancy, tents will be removed and tent frames will be laid flat. The toilet holes will be filled and unnecessary equipment removed from the site.
 3. Temporary structures will be built with materials which blend and are compatible with the surrounding landscape.
 4. Temporary facilities will be screened from the water, and located so that they are unobtrusive as seen from trails and areas of significant public use.
 5. Non-transferable renewal special use permits for these temporary facilities may be issued for five year increments. Authority to issue the special use permits is delegated in accordance with Forest Service Manual 2323.04d.

The policies provided above for temporary facility location (including the Sec. 1316(b) closure) will be reevaluated in 1990 to determine their effectiveness and need for change.

11. Scientific/Geological/Ecological
 - a. Develop a method to pool and coordinate information.
 - b. Set up a scientific advisory committee composed of various agencies and representatives from the scientific community to identify scientific opportunities and needs.

- c. Consider advertisement of scientific needs through a prospectus, to stimulate interest within the scientific community.
- d. Emphasize retention of wilderness value, protection of cultural resources, and baseline studies while managing for minimum disturbance of natural systems or visitors.
- e. Cooperate with Forest Service Research and other interested researchers in conducting research on campsite attributes and impacts and other measures of wilderness condition.

12. Watershed

- a. Water quality will be maintained to meet existing State water quality standards.
- b. Where deemed necessary, water monitoring systems would be implemented on areas impacted by human activity in cooperation with responsible State, Federal, and private agencies.

13. Minerals

- a. Mineral development of valid claims within the monument will be permitted in accordance with Section 503 of ANILCA. Alternatives for development that are economically and technically feasible and cause the least environmental disturbance will be favored. After mining activities are completed, the site should be returned, as nearly as possible, to a natural-appearing condition.

14. Fire

- a. Forest Service policy is to control fires unless otherwise specifically excepted. Since fires on Admiralty usually result from escaped campfires, and since fire is not a natural element in the ecology of Admiralty, fires within the monument will be controlled.
- b. Forest Service Manual 5170.3, R-10 Supplement Number 48, directs that the Forest Service perform fire protection services on Native selected land, so long as funding is available and such land is not subject to State or local real estate taxes and so long as there are no substantial revenues from such land.
- c. Fire prevention activities will be directed specifically at user publics.

15. Visual Quality

Visual Quality Objectives (VQOs) are measurable standards reflecting five different degrees of landscape alteration based upon a landscape's diversity of natural features and the public's concern for scenic quality.

- a. In most cases, wilderness would be managed for a "Preservation" VQO, which allows only ecological changes. However, exceptions to the Wilderness definition are specifically authorized by the Wilderness Act and Alaska Lands Act which may make a Preservation VQO unattainable.
- b. When activities are authorized which cannot feasibly attain the "Preservation" VQO, management should strive for a "Retention" VQO, which allows activities that are not visibly evident. The Retention VQO is in accord with the Wilderness Act which states in part, "generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable." (emphasis added) Authorized activities that cannot achieve a Retention VQO will be considered on a case-by-case basis, but in a manner that minimizes the long term impacts on the wilderness resource.

- c. When possible, temporary structures, special use permits, campsites, cabins and heavily travelled trails will be located away from key interest features (scenic meadows, lake edges, streambanks, cultural sites, etc.) to avoid detracting from local interest points for the natural landscape.

MANAGEMENT AREA

DIRECTION

6

For each management area, the following are described:

1. Situation Statement
2. Management Objectives
3. Standards and Guidelines

Seymour Canal

Situation: Upper Seymour Canal has very high recreation and wildlife values which enhance the already high wilderness values. Human use in the area is concentrated on the saltwater and adjacent shoreline and is within acceptable limits. Data will be collected in the first five years of the plan to develop baseline conditions. The Alaska Department of Fish and Game will be requested to participate.

There are distinct differences between the summer wilderness recreation use and the fall deer hunting use. In summer, an estimated 2-3 parties a day, with a peak of five parties, use upper Seymour. This use is by canoe or kayak, a few large boats, a small number of float planes, and an occasional wheeled plane on beaches. Use substantially increases for deer hunting in fall and winter. An estimated 5-10 parties a day with peaks of 20 use the area during hunting season. This places peak use at 60 people at one time. This peak is probably reached only a few times, during good weather. Hunting use is based from existing private cabins, anchored boats, some beach camps, and a small amount of fly-in day use. Since hunting use is regulated by weather, much of that use concentrates in the upper portion of Seymour in areas that provide protected anchorages or acceptable float plane access. The salt water activity influences the total sense of wilderness in Seymour, yet salt water is not managed as wilderness. Fourteen private cabins under permit facilitate this use. Some private cabins could eventually be converted to some form of public use through donation or abandonment by existing permittees.

A 365 acre parcel of land spanning the Oliver Inlet isthmus has been selected by the State and is a State Park. This park has a public recreation cabin located on the Seymour side of the portage and a mile-long, hand operated rail tram for portaging boats, up to 18 feet in length between Seymour Canal and Oliver Inlet. During the summer of 1982, a joint project between the Forest Service, State Division of Parks and numerous volunteers was initiated to repair the existing tram. Approximately 80% of the needed repair work was completed. The State of Alaska has plans to complete the remainder. With repair of the tram, an estimated maximum of 100 boats a season could gain access to Seymour, given the limits posed by bad weather, tidal conditions, and the time necessary to make the portage.

The Seymour Eagle Management area, encompassing 11,000 acres of an island group, is in upper Seymour Canal and contains over 100 bald eagle nest sites. The U.S. Fish and Wildlife Service has, with some Forest Service financial support, conducted yearly nesting studies here. These studies have provided the best eagle productivity data in Southeast Alaska.

Management Objectives:

1. Maintain existing range of wilderness experiences available to visitors.
2. Monitor visitor use.
3. Work with the State to classify tidelands to be compatible with management of upland wilderness and develop a Memorandum of Understanding with the Alaska Department of Natural Resources for maintenance of the Oliver Inlet tramway and Seymour Canal public use cabin.

Standards and Guidelines

1. Recreation
 - a. The existing Windfall Harbor shelter will be maintained.
 - b. No additional public cabins will be constructed. Private cabins may, however, be converted to public use through donation or abandonment by existing permittees.
 - c. No trail construction will be done unless required for public health and safety.
2. Wildlife
 - a. Continue cooperation with U.S. Fish and Wildlife on the Seymour Eagle Management unit.
 - b. Cooperate with ADF&G in their studies to explore the need to expand the bear refuge into Windfall Harbor or other areas.
 - c. Evaluate the need for wildlife habitat improvements to enhance the wilderness character in areas previously logged.
3. Wilderness Ranger
 - a. Sufficient administrative time will be spent in Seymour Canal to assure effective management of the area.
4. Administration
 - a. Maintain Short Finger Administrative cabin.
 - b. Flaw Point (North side of Mole Harbor) to Shortfinger Point encompassing the islands of Upper Seymour Canal is closed to location of temporary camps.

(NOTE - The following section on Pack Creek is shown as revised by Decision Notices signed by the Regional Forester in June 1988 and by the Forest Supervisor in April of 1989)

Pack Creek

Situation: The 11,000 acre Pack Creek watershed includes a large grassy tidal meadow and a large delta tideflat at low tide. The entire 11,000 acre area is classified as a bear reserve and is closed to bear hunting by State regulation. Virtually all the visitation occurs in several hundred acres near the tideflat. Visitation has ranged from 100 visits in 1982 to almost 1000 visits in 1987 as people come to view and photograph bears while the bears fish and graze. The Pack Creek trail was rebuilt in 1984-5 and leads to an old CCC bear observation platform. A new observatory has been built near the old one.

Stan Price is the sole resident of the area and he has been living at Pack Creek since the 1950's. Mr. Price's simple lifestyle appears to be as great an attraction for visitors as viewing the bears.

Management Objectives:

1. Short Term: To accommodate current uses, including Mr. Price's residency.
2. Long Term: Maintain the area's wilderness qualities. By priority:
 - a. Maintain the wildness in the bears. This long-term objective recognizes that present impacts must be reduced to help convert bears back to a "wild" state.

- b. Minimize disturbance to the bears. The intent of this objective is to protect bears from poachers and human encroachment that would cause bears to leave or become aggressive.
- c. Allow for the optimum number of visitors compatible with the long-term objectives of bear protection and wilderness values.

As a result of the increased visitation and documented close encounters with bears, two environmental assessments were done to correct potentially hazardous situations, protect the welfare of the bears and determine visitor capacities for the area. These assessments are amendments to the original management direction. The first of these assessments established the Pack Creek Cooperative Management Area (PCCMA) which is the area where most of the visitor use occurs. The PCCMA is jointly managed by the Forest Service and ADF&G.

Standards and Guidelines:

1. Recreation: The following regulations for a.- f. are in effect for the PCCMA during the period of June 1 - September 10:
 - a. No camping will be allowed in the PCCMA.
 - b. Visitor movement within the area is limited to avoid negative interactions with bears.
 - c. Visitors are required to place all food in a food cache to prevent bears from associating people with food.
 - d. Visitors are required to obtain a free permit to visit the area. Permits are available in Juneau or through the mail.
 - e. A group size limit of 12 people applies.
 - f. The area is open for bear viewing from 9:00 a.m. to 9:00 p.m. which allows bears a period to use the creek without any people present.
 - g. Pilots are voluntarily requested to avoid low flights and circling over the tideflat.
2. Wildlife
 - a. Continue cooperative management of the PCCMA with ADF&G under the existing Memorandum of Understanding.
 - b. Cooperate with ADF&G to monitor bear use to help identify changes in bear numbers or behavior.
3. Fisheries
 - a. Cooperate with ADF&G to monitor yearly fish runs.
4. Scientific
 - a. The Research Natural Area classification will be maintained. Pack Creek was designated a Research Natural Area by the Chief of the Forest Service in 1951. Recognizing the opportunity for valuable bear research at Pack Creek, the Chief made the designation to allow approved research activities to be pursued.
5. Administrative
 - a. Maintain wilderness ranger presence in the area during heavy visitor use periods (approximately July 10 - September 10).
 - b. Continue the use of Windfall Island camp for administrative purposes.
 - c. Place all commercial outfitter/guides under permit and schedule their activities to avoid conflicts and protect visitors and bears.
 - d. Maintain written information for visitors concerning bear safety and area use.

- e. Maintain the Pack Creek trail and the observatory on an annual basis.
6. Lands
- a. Issue no temporary (camp) facilities permits for this unit.
 - b. Issue Mr. Price's improvements under a life tenure, non-transferable special use permit as provided by Section 1303(b)(2) of ANILCA.
 - c. Remove the old float and machinery on the grass flats adjacent to the Prices' house.
 - e. After departure of the existing residents, the remaining structures will be retained.
 - f. During the spring and fall hunting season station a volunteer or an ADF&G/Forest Service cooperative position (after the Prices leave the area), to monitor visitor use and resource condition of the Pack Creek area, and to assure compliance with the hunting closure.
7. Cultural
- a. Monitor known cultural site to discourage vandalism or disturbance.
8. Motorized Use
- a. Generator and chainsaw use by Mr. Price will be unrestricted.
9. Minerals
- a. Activities on the three mineral claims in the immediate area near Pack Creek will be managed under the minerals management policies contained in the Programmatic Management Direction section of this plan.

Admiralty Lakes

Situation: The Admiralty Lakes Unit is the recreational heart of the Monument/Wilderness and the area where some impacts on wilderness values may occur. Visitor use of the Cross Admiralty Trail has doubled since the 1979 reconstruction of the trail system. Carrying capacity, levels of facility development, and motorized uses seem to be the issues. Present use averaged 30 people a day between July 4 and mid-October. No permit system is planned or anticipated at this time, other than the cabin permit system now in use.

Facilities include seven public cabins, seven three-sided shelters, ten trails with a total of 16.5 miles, and one commercial resort at Thayer Lake. Cabins and shelters are located on six larger lakes. Ten small lakes have no improvements.

Management Objectives (by priority):

- 1. Maintain the present balance of wilderness opportunities.
- 2. Manage fisheries to provide the opportunity to fish in natural systems with native species composition.

Standards and Guidelines:

- 1. Recreation
 - a. As old public cabins are replaced, native materials will be used where practical.
 - b. No new cabins. Maintain existing cabins.
 - c. Maintain existing shelters.
 - d. Cabin maintenance will include firewood fallen and bucked but user may be required to haul and split the firewood.
 - e. Trail maintenance suitable for canoe portaging.
 - f. Provide a wilderness ranger for necessary administration.
 - g. Develop three additional campsites for the Cross Admiralty Canoe Route. Development of campsites may include levelling of tent pad

areas no more than 10 feet by 10 feet using hand tools and construction of native stone fire circles if necessary to prevent duff fires. No other developments or improvements are permitted without approval of the Regional Forester.

2. Wildlife

- a. Support removal of the Thayer Mountain Bear Reserve as proposed by ADF&G, since it currently does not seem to benefit bears.

3. Fisheries

- a. Concur with the suggestion by Northern Southeast Regional Aquaculture Association and ADF&G that this area be retained as natural fisheries area. Because of the high potential for production of anadromous fish, study of the system is anticipated as part of the ANILCA 507(a) process and management should be reevaluated in 1990.

4. Special Uses

- a. Encourage continuation of the special use permit for Thayer Lake Lodge as provided in ANILCA, which allows continuation of the permit for the lifetime of the permittee (or the surviving spouse or child) as of January 1, 1979, or for 15 years, whichever is longer. ANILCA allows continuation of the permit "so long as the management of the lodge remains consistent with the purposes of Admiralty Island National Monument.

Mitchell Bay

Situation: Mitchell Bay, with its associated islands, inlets, tidal action, and marine environment is truly unique and outstanding. The intricate waterways with numerous tidal streams are excellent eagle habitat. Roughly 60 eagle nests have been found in the 25 square mile area. Recreation use tends to be saltwater-oriented except for those traveling inland on the Cross Admiralty Canoe Trail or on the Kanalku Lake Trail. The Forest Service currently maintains an office, maintenance facilities, and personnel in Angoon. The greatest amount of public interest has been expressed over the Mitchell Bay unit. Because of the special interests and responsibilities of the State of Alaska, Kootznoowoo, Inc., and the Forest Service, a cooperative Angoon - Mitchell Bay Unit Plan is proposed for the Mitchell Bay unit. This Angoon - Mitchell Bay Unit will allow the cooperators and the public to resolve the special management issues of the Mitchell Bay unit with each cooperator making decisions appropriate to the agency under existing State and Federal law.

Mixed ownership of public and private land, with specific covenants described by ANILCA, make up the unit. The people of Angoon have high subsistence, cultural, and emotional values in the area. Subsistence activities include fishing, hunting, trapping, and gathering a variety of traditional foods and materials. The area has a wealth of cultural sites and values. Additionally, this unit contains high scenic, recreation, fish, and wildlife values. The Mitchell Bay (MB) management area includes most of the MB watershed. Within the unit are 61,704 acres of wilderness and the Kootznoowoo land, which is non-wilderness. The Kootznoowoo land is primarily shoreline in Kootznahoo Inlet, Favorite Bay, Kanalku Bay, and lower Mitchell Bay. Recreation use of the area is moderate but increasing, since access to Angoon has become easier through the Alaska State Ferry system.

In Section 506 of ANILCA, Congress provided for the protection of the Mitchell Bay area by granting the Natives of Angoon, and their Native corporation, Kootznoowoo, Inc., alternative areas for selection off Admiralty Island. Thus, in return for Kootznoowoo's relinquishment of most of the land they had selected

on Admiralty, Congress granted the corporation selection rights to 21,440 acres elsewhere on the Tongass National Forest.

The corporation retained fee title to a core area surrounding Angoon. These lands are granted in Section 506(a)(3)(A) and are subject to all valid existing Federal administrative sites. These administrative sites are those areas formerly or currently used by any Federal agency in the course of official business, for which future use can reasonably be anticipated. It is further recognized that this core area was made intentionally large to provide all the necessary land for community development and expansion. Such development and expansion is not intended for the 660 feet of shoreline areas described below.

In addition to the core area surrounding Angoon, Section 506(a)(3)(C) granted Kootznoowoo title to all of those lands 660 feet inland of all shorelines and title to all of the islands lying west of the rangeline separating ranges 68 and 69, east. This grant is subject to the reservation in the United States of timber, subsurface, and development rights, except for statutory subsistence rights. Further, "the right of the public access and use within the area, subject to reasonable regulation by the Secretary of Agriculture to insure protection of the resources, and to protect the rights of quiet enjoyment of Kootznoowoo, Inc., granted by law, including subsistence uses consistent with Title VIII of [ANILCA]" is reserved.

Section 506(a)(3)(C), providing for the 660 foot strip along shorelines, dealt with a dual need. First was the need to recognize traditional Native use of Mitchell Bay, and to assure that Native use would always continue. The second need was to recognize the great national interest in managing and preserving Mitchell Bay in a manner consistent with the purposes for which Admiralty Island National Monument was established.

In recognizing these two independent but related objectives, Congress divided between Kootznoowoo and the United States both the interest in and the management responsibility for this important shoreline area. As the owner of the surface estate, Kootznoowoo will have substantial responsibility for the management of this shoreline strip. At the same time, however, the fact that the United States has reserved rights (including timber rights, right of public access and use, subsurface estate, development rights, etc.) in the land requires that it also manage the resources and uses under its control. Any public use made of the area should not prevent Kootznoowoo's traditional uses or otherwise constitute a nuisance. As a result, a joint management effort in this area will be necessary.

Section 506 grants Kootznoowoo the right to develop hydroelectric resources on Admiralty Island within townships 49 and 50 south, range 67 east, CRM (in the vicinity of Thayer Creek) subject to such conditions as the Secretary of Agriculture prescribes for the protection of water, fisheries, wildlife, recreational, and scenic values of Admiralty Island. These restrictions will be formulated in the context of an environmental assessment. It has been proposed that the hydroelectric facility be relocated in Favorite Bay along with a fish hatchery and water supply system. Since the hydroelectric authorization in Section 506(a) was quite site specific, approval of the proposed development's relocation will have to be considered in light of legal authorities for such a relocation, and environmental impacts. It is possible that Kootznoowoo would be required to relinquish the Thayer Creek site if another location were approved, and any other location would be subject to conditions deemed necessary to prevent adverse impact on the National Monument resources and values.

Regarding subsistence, Section 506(a)(2) and (3) and other provisions of ANILCA guarantee the continued use of the subsistence resources under ANILCA Title VIII on the land affected by Section 506 or otherwise granted by law.

Interim management guidelines for the shoreline areas:

- No permanent structures or developments will be permitted, excepting facilities necessary for subsistence uses which are compatible with and blend into the surrounding landscape.
- Campsite for public use will be designated, and camping elsewhere will be discouraged.
- Permits will be issued for the cutting of hemlock, spruce, and cedar for subsistence uses only. Green alder and dead or down trees may be utilized without a permit.
- Archaeological investigations of any kind would be by permit issued with the agreement of Kootznawoo.
- Management of all uses and resources will be in a manner consistent with the management of the monument.
- There will be no permits granted for development of subsurface rights.

The Secretary is directed in Section 506(a)(3)(E) to "consult and cooperate with Kootznawoo, Inc., in the management of Mitchell, Kanalku and Favorite Bays, and their immediate environs..." Congress made this direction recognition of the shared interests of the Native and the government in preserving the unique natural and cultural resources of these areas. This requirement will necessitate the establishment and maintenance of clear channels of communication between the two and a good-faith effort on the part of both to foster a cooperative relationship.

Three alternatives were developed to meet legislated direction and manage the wilderness and non-wilderness corridor lands owned by the Corporation. The most sensitive part of the MB area is Salt Lake, with Kanalku a close second. Salt Lake is the primary destination for the majority of the MB recreation use. In addition, it contains high waterfowl, fisheries, bear, and other wildlife values.

Interim Management Objectives by Priority:

1. Preserve the cultural objects and values of historic and prehistoric sites.
2. Manage resources consistent with the subsistence provisions of Section 810 of ANILCA.
3. Direct public use and provide public information. Maintain the present wilderness experience in Salt Lake or Kanalku Bay. Participate in a cooperative Angoon-Mitchell Bay Unit Plan with the State of Alaska and Kootznawoo, Inc., to gather additional information and resolve issues identified in this plan.

Interim Standards and Guidelines

1. Recreation
 - a. Designate recreation campsites that are free of cultural material or significance. Build natural stone fire rings at campsites to focus use.
 - b. Maintain Crose Admiralty trail to current standard.
 - c. Put commercial recreation guides under permit and schedule trips to avoid conflicts over campsites. Limit commercially guided trips to 12 people per trip when overnight camping is involved. Commercial recreation use that may be proposed by Kootznawoo.

Inc., on corridor lands would be required to fit within the management objectives established for MB.

- d. Recreation information pertaining to MB will be provided in Angoon and Juneau to reach visitors prior to their entering the area.
- e. Establish a summer wilderness ranger program in cooperation with Kootznوو, Inc., to patrol Mitchell Bay to monitor recreation use, and to provide protection to cultural sites, cleanup, and education and interpretive information to visitors.
- f. Maintain Kanalku Lake trail as a primitive trail.
- g. Kanalku/Favorite Lakes - construct a primitive trail from Favorite Bay to the lakes.

2. Fisheries

- a. A fish hatchery proposed for Favorite Bay is favored only in conjunction with a hydroelectric site - a separate environmental assessment or environmental impact statement will determine compatibility and mitigation to wilderness values and subsistence use.
- b. No other enhancement projects will be authorized until the 507(a) fisheries planning process is completed.
- c. Encourage ADF&G to monitor the sport fishery in Kanalku and Hasselborg River to maintain a quality fishery -- Forest Service will cooperate whenever and however possible.

3. Wildlife

- a. Mitchell Bay has been identified by the U.S. Fish and Wildlife Service as an important waterfowl wintering area. Activities within the area will be monitored to identify effects on wintering waterfowl.

4. Cultural

- a. Existing subsistence use (camping) on traditional cultural sites will be allowed. These sites will be periodically monitored to assure ground disturbance is minimized.
- b. Visitor disturbance and vandalism of cultural sites will be avoided by directing visitor use elsewhere, and through education and surveillance.

5. Angoon Hydro

- a. Angoon's proposed hydroelectric, water supply, and fish hatchery in Favorite Bay will be pursued with an EIS or EA. ANILCA granted rights to develop hydropower in Thayer Creek. If Favorite Bay is feasible, and Kootznوو, Inc., applies for relocation, the Forest Service will support development there in lieu of rights in Thayer Creek.

6. Administrative

- a. Initiate a summer wilderness ranger program (See Recreation).
- b. Cooperate with the State to designate State tidelands in some compatible classification with wilderness.
- c. No administrative facilities outside of Angoon are planned.

7. Chainsaws

- a. Chainsaw use for subsistence woodcutting will continue.

- b. Chainsaws for trail and cabin maintenance will be administered by the Monument Ranger so as to minimize the effect on user solitude while still providing service to these users.

8. Salt Lake/Kanalku

The amount and kinds of uses that can be accommodated by Salt Lake and Kanalku Bay will be a key issue to be resolved by the proposed Angoon-Mitchell Bay Unit Plan.

- a. Designate campsites within Salt Lake and Kanalku that are compatible with cultural management objectives.
- b. As part of the cooperative plan, work with the State of Alaska to explore the desirability of a State classification such as wildlife critical habitat for the marine Salt Lake waters and tidelands.

Shee Atika

Situation: ANILCA granted Shee Atika, Inc., the Sitka Native corporation, 23,073 acres on northwest Admiralty Island to satisfy Shee Atika's land entitlement under the Alaska Native Claims Settlement Act (ANCSA) of 1971. Shee Atika plans to harvest timber from these lands. In addition, they are exploring opportunities for aquaculture and recreation. ANILCA further directs the Secretary of Agriculture (Forest Service) to designate easements needed to provide access to National Forest lands which border the Shee Atika tract. These easements, under Section 17 (b) of ANCSA, are for the purpose of access to federal lands, not recreation. On May 13, 1981, the Regional Forester designated thirteen 25 foot trail easements and seven one acre site easements.

At present, there are three public recreation cabins within the area and one developed trail. The remaining 12 trail easements are undeveloped routes, providing access to public lands and are on locations known to be used by recreation and/or subsistence visitors.

In addition to the above easements, Shee Atika, Inc., has agreed to allow the following easements:

- 1. Three one-acre site easements for the existing public cabins on Lake Kathleen (1) and Lake Florence (2). Easements are to permit continued public use of the cabins as presently prescribed by Forest Service cabin use rules.
- 2. Fifty-foot linear easements for recreational/subsistence access to the shorelines of Peanut Lake, Lake Kathleen, and Lake Florence.

Shee Atika, Inc., has also agreed to consider exchanging the land occupied by and surrounding the three public cabins for three tracts of approximately 40 acres each which were excluded from their selection on Peanut, Kathleen, and Florence Lakes.

Shee Atika, Inc., has plans that call for development of roads, harvest of timber, and possible development of aquaculture and commercial recreation facilities.

Various mineral companies have been actively prospecting for minerals on three valid mining claims just above the Shee Atika selection in the Lake Kathleen drainage. Future development of a mine is uncertain and prospecting to date has had minor effects on surface resources.

Management Objectives (by priority)

1. Maintain the three existing public cabins on Lakes Florence and Kathleen, as well as maintain public access on existing public easements across Corporation land to adjoining National Forest lands.
2. Negotiate a minor land exchange with Shee Atika for the existing public cabins to be on National Forest land.

Standards and Guidelines

These guidelines recognize the disturbance to the wilderness, but also recognizes that out of a 70-100 year rotation for the timber, harvest activities will occur for some 15-40 years of that period. Therefore, maintain a wilderness experience on adjoining National Forest.

1. Recreation
 - a. Maintain existing public cabins on Lakes Florence and Kathleen.
 - b. Maintain the existing trail from Florence to Salt Water.
 - c. Mark routes across Corporation land along existing easements from the lakes to adjoining National Forest lands.
 - d. Develop campsites on the public easement at Cubs Cove.
 - e. Build a trail on the existing easement from Cubs Cove across Corporation land south along the beach to National Forest land.
2. Wildlife
 - a. Cooperate with ADF&G and others to assist in monitoring bear and deer populations within this unit.
3. Fisheries
 - a. Cooperate with ADF&G and others to monitor or carry out research within this unit.
 - b. Favor barrier removal in Ward Creek over Kathleen and Florence Creeks to reduce potential impacts to existing sport fisheries.
4. Cultural
 - a. Provide normal investigation and protection and, if necessary, mitigation of any National Forest or easement site slated for development.
5. Administrative
 - a. Explore the possibility of an exchange of lands with Shee Atika on lakes to place cabins on National Forest lands.
6. Water
 - a. Work with Alaska Department of Environmental Conservation to develop some level on instrumentation for water monitoring for temperature and sedimentation impacts.
7. Minerals
 - a. The Pyrola claims are a valid existing right. Any proposed development would be evaluated in a separate process similar to that used at Grassy Creek.

Grassy Creek

Situation: This 23,000 acre watershed was included as part of the National Monument designation, but excluded from wilderness classification. This wilderness exclusion was intended by Congress to facilitate the development, by Noranda Mining, Inc., of their claims. At present eight Noranda, Inc., claims in

Greens Creek have been determined to be valid. These claims, containing gold, silver, copper, lead, and zinc, are within the monument but not in the wilderness. Noranda is proposing a major mine and milling complex which is expected to operate 15-30 years and employ 300 workers. A separate environmental statement has been prepared. An August, 1982, a draft environmental statement was released for public and agency review. This draft EIS described eight alternatives including an IDT preferred alternative which displayed various options for the transportation of the workers to the island and mine, housing, location of mill site, tailings disposal, and water discharge. The decision and final EIS was released on January 21, 1983. The EIS displays how Noranda will develop its claims. The objectives for the Greens Creek Monument lands are displayed in the EIS.

Additionally, Noranda has submitted a proposal to adjust the Monument boundary for the purpose of extending the period of exploration for perfection of imperfect mining claims beyond the deadline of December 2, 1985 established in ANILCA. The scope of this proposal is beyond the scope of this document and will require preparation of a separate NEPA document. Such a document is currently being prepared and will include several alternatives as well as an evaluation of the possible positive and negative effects on the wilderness resource.

The Programmatic Management Direction will apply to Greens Creek for those non-mineral-related issues.

**Monument/Wilderness
Lands Outside
Management Areas**

Situation: The monument lands along Stephens Passage south of Young Bay and along the northern portion of the east side of the Glass Peninsula receive considerable day and overnight use by Juneau recreationists. There are eight private special use hunting cabins that facilitate the heavy September to December deer hunting activity that this area receives.

The remaining lands within the monument are generally the most remote, receive the least use, have the highest wilderness values, and have the least conflicts of the entire island. On these lands, there are four widely scattered special use hunting/trapping cabins and two Hood Bay Alaska Department of Fish and Game administrative cabins, and two very tentative fisheries proposals (a hatchery in Eliza Harbor and removal of a barrier in Fishery Creek).

Angoon subsistence users frequent the bays south and the coast north of the village. The majority of the identified historic and prehistoric sites occur on these lands.

Southeast Admiralty is frequently used by Petersburg and Kake residents for subsistence. Beyond these uses and proposals, there are no significant activities on the horizon.

Objective:

Maintain the existing balance of wilderness opportunities.

Standards and Guidelines

1. Recreation

Maintain existing public recreation cabins. Construct two to three primitive trails from beach to Eliza Lake or Pleasant Lake or develop alpine access.

2. Wildlife

- a. Most of the old clearcuts are on these lands. This area offers the most opportunity for thinning or other deer habitat improvement. Other wildlife improvement opportunities may exist but are not now inventoried. Wildlife habitat improvement projects must demonstrate improvement of the wilderness resource or be required to protect subsistence uses.
 - b. Cooperate with the Alaska Department of Fish and Game to identify key wildlife habitats and monitor their condition.
3. Fisheries
- Permanent facilities will be considered in accord with the ANILCA Section 507(a) and 1315 planning efforts.
4. Administrative
- a. Retain Alaska Department of Fish and Game administrative cabin in Hood Bay.
 - b. Analyze and make recommendations on refuge float proposals on a case by case basis.

STIKINE-LECONTE
WILDERNESS
MANAGEMENT DIRECTION

The following direction for the management of the Stikine-LeConte Wilderness which was approved by the Regional Forester November 26, 1984 applies as modified by the Chief's August 11, 1986 decision on the Stikine-LeConte Appeal. Modifications in accord with that decision are shown by overstriking deleted wording and highlighting added wording. (NOTE - A complete copy of the Stikine-LeConte Management Direction Assessment with all appendices referenced below is on file at the Forest Supervisor's Office, Stikine Area, TNF.)

Management Direction
That Applied To All
All Alternatives
Considered

The objective in Wilderness management is to maintain an "area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain" (1964 Wilderness Act). The objective in preparing the Stikine-LeConte Wilderness management direction is to preserve for the benefit, use, education, and inspiration of present and future generations, the features and resources available within the Wilderness without impairing its value as Wilderness. Activities and uses allowed within the Wilderness will be within the provisions of the 1964 Wilderness Act except where modified by the provisions for Wilderness management contained in ANILCA.

Navigable Waters

In all alternatives, there are no restrictions on salt water or navigable water activities because this is outside of the Wilderness and Forest Service jurisdiction. The State of Alaska, United States Army Corps of Engineers, and the United States Coast Guard have various jurisdictions over salt water and navigable waters activities. The Forest Service will coordinate with these agencies, as appropriate, on proposed uses of these areas. Any restriction of boat traffic on smaller sloughs to prevent bank erosion will be coordinated with these agencies. For traditional activities of hunting, fishing, trapping, and general recreation, the public may continue to use airplanes and motorboats on all lakes and water channels, and may use snow machines when on ice or on land with adequate (12 inches or more) snow cover.

Government Access

~~The Forest Service in its administration, maintenance, or scientific studies in the Wilderness may use fixed-wing and helicopter aircraft, motor boats, and snow machines on ice or adequate (12 inches or more) snow cover. The Forest Service radio antennae on Elbow Mountain will be maintained in all alternatives to provide a necessary communication link for administration and public safety.~~ Other Federal or State government agencies may use similar motorized equipment in accomplishing their permitted activities inventory and research objectives.

Private Land

The primary emphasis of the private land within the Stikine-LeConte Wilderness is currently oriented to recreational use, although one tract is used as a permanent, year-round homesite. No Federal restrictions are placed on the use of these private lands, however it is anticipated the recreational emphasis will be continued and no conflict with Wilderness will occur. In all alternatives, private land may be acquired through donation, purchase or exchange, ~~but these acquisitions will not be initiated by the Forest Service.~~ Acquisitions will be handled on a willing seller/willing buyer basis as opportunities occur. Private landowners will be allowed adequate and feasible access to their lands subject to reasonable regulations to protect the Wilderness and minimize impacts. Because all private land is directly accessible from salt water, the need for access across National Forest Wilderness appears to be non-existent at this time.

Access Treaty

A treaty between Great Britain and the United States was signed in May 1871, stating that navigation on the Stikine River shall forever remain free and open for the purposes of commerce to the subjects of her Britannic Majesty and to the citizens of the United States, subject to any laws and regulations of either country within its own territory, not inconsistent with such privilege of free navigation (Appendix B). Within Alaska, clearing the navigation channels of fallen trees (sweepers, snags) and those on the shore that are subject to falling into the navigation channels is performed for the United States Corps of Engineers through a contract administered by the Forest Service. In all alternatives, maintaining free and open navigation will be allowed. The use of motorized equipment such as, but not limited to, motor boats, chainsaws, and power winches will be allowed in order to accomplish this work quickly and safely. Provisions in the contract for the sale of removed trees raised questions of this operation being a commercial timber sale. The operation is not a commercial timber sale, however, because the primary purpose of removing trees is to maintain free and open navigation. Allowing the sale of the removed trees is consistent with maintaining free and open navigation. It also provides additional safety and sanitation measures by totally removing the trees from the area of concern and not hindering navigation or aesthetics in other areas.

Commercial Activities Commercial freighting operations and outfitter/guide operations between the United States and Canada, or such operations solely along the water channels that do not utilize land areas within the Wilderness, constitute free and open navigational use of the Stikine River. In all alternatives, no restrictions will be placed on these activities because they are outside the Wilderness.

As of January 1, 1979, no persons/organizations were providing visitor services within the Stikine-LeConte Wilderness under outfitter/guide permits or other special use permits, however, it is possible this type of use has occurred. Persons/organizations will be required to demonstrate proof of providing visitor services in this Wilderness prior to January 1, 1979, to establish preference rights for obtaining an outfitter/guide permit.

The removal of sand and gravel for commercial use by bucket dredge and barge occurs within the main river channel under authority from the State of Alaska and the U.S. Army Corps of Engineers. This is the main source of sand and gravel for construction projects in the City of Wrangell. The actual operation is seasonal, intermittent, of very short duration, and apparently has minor impact to the environment. In all alternatives, the Forest Service will cooperate with the State and the Corps in the planning and operation of this use to minimize potential effects on the Wilderness.

Stikine Road Access Section 1113 of ANILCA provides for the study of the need for access by Canada in the Stikine River region by various forms, including but not limited to a road along the Stikine River or other alternative routes. The construction of a road or other form of access within the Wilderness would affect the existing environment and uses of the Wilderness. The final report of this access study is not due until after the Wilderness EA is complete. Therefore, this Wilderness EA will not address the access project at this time, but as necessary through the National Environmental Policy Act (NEPA) process when the required studies and reports have been finalized.

Stikine and Iskut Rivers The potential construction of a series of five dams on the Stikine and Iskut Rivers in British Columbia, Canada, is being studied by Environmental consultants hired by B.C. Hydro, a Crown corporation. Construction of the dams could affect

the existing environment and uses of the Wilderness due to the alteration of natural water flows. The final decisions regarding construction of the dams has not been made and is beyond the scope of this EA. Therefore, the Wilderness EA will not address the effect of the dams project on the Wilderness at this time, but as necessary through the NEPA process when the construction decisions have been finalized.

State Land Selection Under provisions of the Alaska Statehood Act, July 7, 1958, the State of Alaska may select lands from the Federal government for community expansion and recreational purposes. There is one State selection pending in the Stikine-LeConte Wilderness. This selection includes approximately 242 acres within LeConte Bay at Bussey Creek. The State selection was disapproved by the Forest Service. The State is currently appealing that decision. No date has been set for settlement. The Forest Service will take no action in any alternative upon the lands in question to alter their existing management. If the lands are acquired by the State, the Wilderness direction will be amended as necessary to coordinate management of affected lands with State management of this selection.

Mineral Activities In all alternatives, exploration for and mining of mineral deposits will be allowed pursuant to the provisions of the current mining laws and the Wilderness Act of 1964 and ANILCA. Mining activity will only be allowed after December 31, 1983 on claims having a valid mineral discovery prior to that date. Validity determinations will be completed as soon as practicable.

Trespass Structures ~~Several occupancy trespass structures are located within the Wilderness. These cause concern to visitors and the Forest Service because of the actual illegal occupancy and the report of occasional harassment from the trespassers when encountered.~~ There are 10 to 15 existing structures currently not under permit within the Wilderness. Section 1303(b) of ANILCA and Regional Supplement 34 to FSM 2320 allows these structures to be placed under special use permit in some situations for non-recreation uses. This may be useful in resolving occupancy trespass and will be utilized where applicable in all alternatives. Those trespass structures not qualifying will be administered as stated under each alternative.

Cultural Resources In all alternatives, the Forest Service archaeologist will be consulted prior to any scheduled ground disturbing activities within the Wilderness to prevent damage to cultural/historical resources.

Subsistence An analysis on the effect of the proposed action on subsistence uses was done in conformance with Interim Directive No. 7 to Forest Service Manual 1920. This analysis is displayed in Appendix F.

Rural residents engaged in subsistence activities shall have reasonable access. This access provides for the use of snowmobiles, motor boats, airplanes, and other means of surface transportation subject to reasonable regulation to protect other Wilderness values. Allowance of these activities will be coordinated with the State of Alaska. Lettered signs or other markers commonly used to indicate trapline locations are not required by State of Alaska or Federal law and will not be permitted within the Wilderness.

The role of subsistence in the lifestyle of Wrangell and Petersburg residents is moderate. The primary subsistence resources acquired from the Stikine-LeConte Wilderness are moose, waterfowl, and fish. Residents fully utilize these and

vegetative resources acquired in their recreational or other activities, and many plan on these resources to supplement their store-bought provisions. However, relatively few residents are totally dependent on these resources for a livelihood or existence at the current time. State fish and game regulations do not currently give priority to subsistence use or users in this area. There is no indication that the incidence of subsistence use will increase significantly in this planning period. The analysis in Appendix F shows that the proposed action will not significantly restrict subsistence uses in the area covered by this direction.

Fisheries

Section 507(a) of ANILCA mandates a cooperative fisheries planning process involving the State of Alaska, the Forest Service and the non-profit aquaculture associations. The process will examine fisheries enhancement needs and opportunities Forest-wide, and will explore interrelationships between fisheries enhancement opportunities and other resource uses such as Wilderness or other recreation uses. The process is scheduled to be completed by 1985.

Until this process is completed, lake enrichment, fish stocking, and stream clearing projects will be authorized in all alternatives. Other types of projects will be authorized on a case by case basis through the NEPA process. There will be ample opportunity for the public to comment. Projects which were previously approved under Wilderness study criteria will be allowed to continue.

Permits for temporary facilities including the previously used weirs on Andrews Creek and Ketili Creek needed in connection with fisheries research, management or enhancement/rehabilitation projects may be issued by the Forest Supervisor. Permanent facilities require Regional Forester approval. Any authorized facilities shall be constructed in such a rustic manner as to blend into the natural character of the area and be limited to those essential to the authorized activity. Camps should be located a sufficient distance from attractions or important travel routes to avoid conflicts with other visitors.

Fire

A Stikine Area Fire Management Plan is in progress. The policy for fire management is as stated for each alternative.

Other

Future developments that are allowed by ANILCA but not currently expected to occur within the Stikine-LeConte Wilderness, will be addressed as necessary on a case-by-case basis through the NEPA Process in correlation with the Wilderness management direction as the projects are proposed. All management direction will be consistent with the Alaska Coastal Management Program.

Alternative C

(Note - this alternative is the approved management direction)

This alternative will allow limited developments and uses according to the Wilderness Act of 1964 and ANILCA. The emphasis will be on providing moderate density recreation in SPM areas and low density recreation in all other areas, while maintaining a high quality Wilderness setting.

Other allowable uses will follow similar density patterns. Existing developments and uses in SPM areas will continue. Limited new developments and uses in SPM and P2 will be allowed by special use permit. Developments will be phased out as their use decreases. Developments and uses will be monitored and limited as appropriate to assure environmental impacts do not approach unacceptable levels.

Standards and guidelines for specific management direction are as follows.

All existing Forest Service cabins will be maintained consistent with funds received for their use (Appendix C). ~~These cabins may be relocated to better facilitate recreation use.~~ The following cabins may be relocated to improve the health and safety of the user based on an analysis, to improve solitude, to improve wilderness resource, and to be compatible with the immediate and surrounding landscape. The Twin Lakes cabin will be relocated under this alternative to a location more accessible year-round. The Binkley Slough cabin may be relocated to provide a more suitable site under this alternative. Construction of new Forest Service cabins, shelters, or tent platforms will be allowed in SPM areas if it will better ensure the public health and safety and is approved by the Regional Forester. No structure intended for overnight use will be allowed within 1/2 mile of the Chief Shakes Hot Springs. Construction of Forest Service tent platforms will be allowed in P2 areas if it will better ensure the public health and safety. Materials used for the construction, reconstruction, or maintenance of cabins may be of native or commercial manufacture. A rustic appearance will be attempted, and structures will be stained or painted to blend with the environment. Where the surrounding environment will support wood stoves, they will be added as soon as practicable.

The existing Forest Service developments at Chief Shakes Hot Springs will be maintained. The old tub enclosure will be replaced with a tub platform to provide for the protection of the public health and safety. New development at Chief Shakes or other hot springs is not expected to occur, but will be limited to that needed for public health and safety or to prevent environmental degradation. Reconstruction of the boat landings at Chief Shakes Hot Springs will be allowed to prevent bank erosion.

~~The existing developments at Twin Lakes Picnic Ground will be maintained to provide for public health and safety and protect the area from environmental degradation. Reconstruction of the boat landings at Twin Lakes Picnic Ground will be allowed to prevent bank erosion.~~ The Twin Lakes picnic ground will be removed from the wilderness.

Existing Forest Service hiking trails at Chief Shakes Hot Springs will be maintained and may be reconstructed to provide safe passage. Boardwalks may be used. The existing hiking trail at Twin Lakes Picnic Ground will be brushed out as needed to allow clear passage with no tread maintenance. New hiking or water trails may be established as needs are identified to distribute use or protect Wilderness resources. The Mallard Slough hiking trail will be constructed as soon as practicable from the cabin to grass flats north of the cabin to aid in dispersing recreation use. All trails will be constructed and maintained to be a part of the landscape rather than an intrusion on it.

Lettered signs will be maintained at developed sites only using the least number of sign possible. These signs will be placed on structures rather than on posts or trees. All other lettered signs will be removed. Travel and route information will be provided primarily through maps and brochures, but route markers will be allowed if found necessary to ensure public health and safety.

~~Manual labor will be attempted in Forest Service maintenance, however, use of chainsaws, power winches, and generators will be allowed in SPM areas unless environmental impacts are shown to be approaching unacceptable levels. Motorized equipment use will not be scheduled during high recreation use periods and will not be allowed in P1, P2, or SPNM areas.~~ In order to minimize impacts of

administrative activities on Wilderness visitors, the administrative use of motorized equipment will be limited to the following:

I. Access

1. Motor boats within the SPM area.
2. Float plane landings within the SPM and P2 areas.
3. Helicopter use within SPM, to service radio repeaters, and in times of emergency, such as search and rescue, within other areas.
4. Snow machines for winter patrol within the SPM.

II. Motorized equipment use will not be scheduled during high recreation use periods and will be limited to SPM areas. The equipment used will be limited to:

1. Chain saws and power winches for clearing of navigational hazards within the SPM for maintaining navigation along the Stikine River.
2. When cabins are vacant, chain saws may be used for maintaining firewood at recreation cabins.
3. When cabins are vacant, chain saws, power winch, and generator may be used for construction and maintenance of recreation cabins.
4. Chain saw use for bonafied emergencies.

Public Use of
Motorized Vehicles

~~General-public-recreation-expressly-permitted-by-the-Wilderness-Aet-of-1964-or~~
~~XX~~
~~XX~~
~~XXXXXXXX~~ The general public will be allowed to use airplanes (fixed wing), motorboats, and snow machines as a means of access unless environmental impacts are shown to be approaching unacceptable levels. No motorbikes, three-wheelers, or all-terrain vehicles will be allowed as they have not been traditionally used for access. No hovercraft will be allowed on land areas of the Wilderness as they have not been traditionally used for access. No touch and go airplane landings will be permitted as they are not used as a means of access.

Public Use of
Mechanized Equipment

Use of chainsaws, power winches, generators, and other motorized equipment will be allowed in SPM areas in connection with the taking of fish and wildlife, if environmental impacts are shown to be insignificant. ~~Meterized-equipment-use~~
~~will-be-permitted-in-P1,-P2,-and-SPNM-areas-only-with-a-limited-special-use~~
~~permit,-because-motorized-equipment-has-net-been-a-traditional-activity-in-these~~
~~areas.~~ (Note - In his Stikine-LeConte Appeal Decision, the Chief of the Forest Service has determined that the use of chain saws and generators by recreation residents and recreation cabin permittees in close proximity to these structures is not required by ANILCA and that such use is contrary to Forest Service Policy and therefore shall not be permitted in the Stikine-LeConte Wilderness. The Regional Forester may use his descretion in determining how, and over what time period, these uses shall be phased out.)

Special Uses

The existing special use cabins, tent platforms, and structures used for scientific study, will be allowed to continue according to ANILCA and R-10 Supplement 34 to FSM 2320 ~~r-which-set-specific-time-periods-and-conditions-for~~
~~various-uses.~~ New Temporary structures will be allowed in association with the taking of fish and wildlife, provided the site is away from primary public recreation areas and other permitted structures, and reasonably out of view from main travelways. Existing hunting platforms and ladders used in subsistence hunting may remain in place until needing replacement. Visquine and temporary coverings must be removed after seasonal use. New and reconstructed tree platforms and ladders will be sited so as to blend with the environment and be out of view from main travelways, unless such location is unsafe. Ladders may remain in place after seasonal use. ~~New-cabins-will-be-allowed-in-SPM-areas~~

~~only, if the user must have the protection of a cabin, or the public or Forest Service has need of the cabin after the original use ceases to better ensure the public health and safety.~~ Materials used for the construction, reconstruction, or maintenance of structures may be of native or commercial manufacture. A rustic appearance will be attempted, and structures will be stained or painted to blend with the environment. Developments not needed for public or Forest Service use will be considered for removal or relocation within a range consistent with the intent of the special use permit when no longer used for the original purpose. Trespass structures more than 5 miles from another developed structure will be posted as emergency shelters with no maintenance provided unless disposal will better ensure the public health and safety, or they have cultural significance. Trespass structures within 5 miles of another developed structure will be removed as soon as practicable, unless culturally significant.

- Commercial Activities Outfitter/guide permits will be issued to the extent necessary to realize the recreational opportunities of the area provided that these activities are compatible with non-commercial recreational use and maintain the Wilderness resource. Campsites and tent platforms will be allowed in SPM and P2 areas based on analysis and need.. Use will be within standard ROS guidelines.
- Fire Management Surveillance of all fires. Extinguish all man-caused fires that exceed 1 acre in size. Allow man-caused fires under 1 acre and all fires of natural origin to burn under surveillance unless they threaten life, property, private land, or Wilderness features of exceptional value, once the fire management prescription in the Forest plan is approved.
- Wildlife Habitat Restocking and habitat manipulation for indigenous species will be allowed according to FSM criteria in all but P1 areas. The objectives of these efforts will be to enhance the Wilderness resource.

ENDICOTT WILDERNESS
MANAGEMENT DIRECTION

The following management direction for the Endicott River Wilderness was approved by the Regional Forester July 25, 1984 and except as modified by the Chief's decision on the Stikine-LeConte Appeal, is the current direction for the management of this wilderness.

(NOTE - A complete copy of the Endicott Wilderness River Environmental Assessment and Wilderness Management Guidelines with all appendices referenced below is located on file at the Forest Supervisor's Office, Chatham Area, TNF)

Minerals

All mineral related activities in wilderness areas will remain subject to the Forest Service Surface Mining Regulations 36 CFR 228 and the Wilderness Act of 1964.

Subject to valid existing rights, wilderness areas were closed to mineral entry as of midnight, December 31, 1983. To have valid existing rights a claimant must have located and maintained their claim prior to December 31, 1983 and the claim must contain a discovery as defined by mining laws. Prior to approving plans of operations applicable after December 31, 1983, a minerals examination and resultant minerals report must confirm that, as of midnight, December 31, 1983, there was a valid mineral discovery on each claim covered by the plan of operation. These determinations will begin after January 1, 1984. Mining claims with valid existing rights may be accessed and operated after December 31, 1983 provided there will be no unnecessary or undue degradation of the wilderness character, and that reclamation measures are adequate to return the land as near as practicable to pre-mining condition.

The Wilderness Act of 1964 also provides for patenting of mining claims located within wilderness. Depending on the dates of claim location, inclusion into the Wilderness Preservation System, and establishment of a valid discovery, a mineral patent may be issued for both the mineral and surface estates or just the mineral estate.

Claimants in wilderness areas after December 31, 1983 may have an option to file a Notice of Intent to Hold their claims with the Bureau of Land Management. This action may protect the claimant's interests even when no assessment work is done. Some minimal assessment work such as brush clearing, remonumenting claim corners, etc. may be allowed before a validity exam is done. Any information gathered after December 31, 1983 about the mineral character of a claim cannot be used to perfect a discovery or claim. Consequently under current law, 1983 is the last chance a claimant has to conduct exploration to prove a discovery and locate mining claims.

Access

The Forest Service shall permit the general public the use of snowmachines (during periods of adequate snow cover), motorboats, airplanes, and nonmotorized surface transportation methods for traditional activities. Traditional activities include recreation activities such as fishing, hunting and hiking. Such uses are subject to reasonable regulations to protect natural or other values from damage. Traditional activities, which are legal, shall be allowed to continue in areas where such use has occurred, and no proof of pre-existing use will be required in order to use a snowmachine, motorboat, or airplane. ANILCA provides that such access shall not be prohibited unless the Regional Forester finds, after holding a hearing, that such use would be detrimental to the resource values of the wilderness.

Aquaculture

Section 507(1) of ANILCA mandates a cooperative fisheries planning process involving the State of Alaska, the USDA Forest Service, and non-profit aquaculture associations. The process will examine fisheries enhancement needs and opportunities Forest-wide, and will explore interrelationships between fisheries enhancement opportunities and other resource uses such as wilderness or other recreation uses. The process is scheduled to begin during 1983 and be completed by fall of 1984.

Decisions to allow or not to allow particular fisheries enhancement projects in designated wilderness will be made through the NEPA process, which will include identification and evaluation of non-wilderness alternatives, if available, and the relative impact of the proposed action on wilderness. There will be an ample opportunity for the public to participate. Wilderness plans will be amended to allow those enhancement activities selected in the NEPA record of decision.

Until this process is completed, lake enrichment, fish stocking, and stream clearing projects will be authorized in wilderness. Other types of projects will be included on a case-by-case basis. However, projects which were previously approved under wilderness study criteria, will be allowed to continue.

Permits for temporary facilities needed in connection with fisheries research, management, or enhancement/rehabilitation projects may be issued by the Forest Supervisor. Permanent facilities require Regional Forester approval. Any authorized facilities shall be constructed in such a rustic manner as to blend into the natural character of the area and be limited to those essential to the authorized activity. Camps should be located a sufficient distance from attractions or important travel routes to avoid conflicts with other visitors.

Hydropower

Under Section 4 (d)4 of the 1964 Wilderness Act, the President of the United States may within a specific area authorize the prospecting for water resources, the establishment and maintenance of reservoirs, and associated facilities including roads for power projects. Since no formal proposals for hydropower facilities within the wilderness have yet been received, the issue cannot be resolved within this document.

Forest Service conclusions and recommendations in connection with any proposals for new water-resource developments will be based upon comprehensive, factual information developed by an environmental analysis, and draft and final environmental impact statements, as prescribed by the National Environmental Policy Act. The final environmental impact statement will require approval by the Chief of the USDA Forest Service. Any recommendations in favor of the proposal must be based upon a clear showing that the public values to be gained exceed the values that would be lost, and that the need cannot be met outside the wilderness. When a proposed structure is thus found to be in the public interest, consideration will also be given to a recommendation to exclude the applicable area from wilderness.

Fish and Wildlife

Sport hunting, trapping, and fishing opportunities in a wilderness setting, including the harvest of wildlife and fish designated as game animals, furbearers, or game birds by or under State laws will continue. Coordination with other State and Federal game and fish agencies would be sought in order to ensure maintenance of the wilderness resource.

Subsistence Uses

Rural residents engaged in subsistence activities shall have reasonable access. This access provides for the use of snowmobiles, motorboats, airplanes, and other means of surface transportation subject to reasonable regulations to protect other wilderness values. Allowance of these activities will be coordinated with the State of Alaska.

There is very little substantiated subsistence use in the Endicott River Wilderness. No subsistence permits have been issued.

Subsistence uses in the Endicott River Wilderness Area has been extremely limited and is generally limited to the lower river corridor for moose, bear hunting, and fishing and the upper watershed area for goat and moose hunting.

Fire Management

Due to the historic low incidence of natural fire in the wilderness, the use of prescribed fire is not anticipated and management direction is to extinguish wildfire.

Recreation

The decision is not to develop any cabins, trails or hardened campsites and to emphasize primitive recreation opportunities.

This alternative would continue to accommodate existing uses, and would have the least effect on current opportunities for wilderness recreation and solitude. The western alpine portion of the wilderness area bounds Glacier Bay National Park and Preserve for about 40 miles. The National Park Service classified their boundary area as a "Wilderness Natural Area" with no planned development and little upland use. The decision not to construct either cabins or trails in Endicott River Wilderness would complement the management direction of the National Park Service.

Special Uses

Permits for outfitting and guiding operation may be issued when the proposed use is compatible with resource values and provides a needed public service, or assists in the management and utilization of National Forest resources.

Any persons who were engaged in adequately providing any type of visitor service within any wilderness, on or before January 1, 1979, shall be permitted to continue to provide such type of service and similar types of visitor services within that wilderness, if such services are consistent with the purposes for which the wilderness was established (ANILCA Sec. 1307(a)). Presently, there are no outfitter/guides operating under a special use permit issued by the Forest Service. However, it is suspected that a few State of Alaska registered hunting guides use the area for hunting black bear and goat. In selecting persons to provide new visitor services, (except sport hunting and fishing) preference shall be given to the Native corporation which the Regional Forester determines is most directly affected by the establishment of the subject wilderness and to persons who are determined as local residents.

Outfitter Guides. Permits for outfitter guides would continue to be issued where there is a demonstrated public service need unless conflicting uses develop and/or measurable resource damage begins to occur. Maximum size for outfitter guide parties shall be 12 persons. Economic viability and maintaining the wilderness solitude provided the rationale for the party size limitation. The number of outfitter guide permits within the wilderness area would be allowed to increase within the context of the No Action/No Change alternative.

Limiting outfitter guide parties to a maximum of 12 persons would have no immediate effect on current upland party size since current party size is generally below this standard.

Temporary Camps

Temporary facilities authorized by ANILCA Section 1316 shall include tent platforms, caches, shelters, and associated temporary structures which are directly and necessarily related to the taking of fish and wildlife but shall not include cabins.

All new facilities shall be constructed of materials which blend and are compatible with the immediate surrounding landscape. Camps shall be located at sufficient distance from attractions and off of trails to avoid conflicts with other visitors.

Permits will be issued using discretion concerning distances from attractions, such as aircraft landing areas and other popular sites.

In an effort to minimize impacts on existing users permitted temporary camps would be located on:

1. Sites that are approximately one half mile from popular aircraft landing areas.
2. Sites that are not currently popular campsites. These would be located and inventoried using Code-a-Site Inventory System.
3. Be located so that they will not constitute a significant expansion of existing uses which would degrade the wilderness character. Establishing criteria which would determine a significant expansion of existing uses will be developed as monitoring indicates levels of impacts and actual uses.

SOUTH BARANOF
WILDERNESS
MANAGEMENT DIRECTION

The following management direction for the South Baranof Wilderness was approved by the Regional Forester April 22, 1983 and except as modified by the Chief's decision on the Stikine-LeConte Appeal, is the current direction for the management of this wilderness.

(NOTE - A complete copy of the South Baranof Environmental Assessment and Management Direction with all appendices referenced below is on file at the Forest Supervisor's Office, Chatham Area, TNP.)

ROS

The Wilderness Area will be maintained in a combination of ROS classifications: Primitive II (18%); a limited (less than 2%) increase in Semi-Primitive/Motorized and Rural; and the remaining 82% in ROS class Primitive I. It approximates a no change from existing conditions.

Aquaculture

The issues of aquaculture development is not resolved in this plan. All decisions for structural and non-structural fishery enhancement projects will be made through the NEPA process. The need for aquaculture projects within wilderness will be determined using the ANILCA 507(a) planning process and an EIS supplement to TLMP.

Section 507(a) of ANILCA mandates a cooperative fisheries planning process involving the State of Alaska, the Forest Service and the non-profit aquaculture associations. The process will examine fisheries enhancement needs and opportunities Forest-wide, and will explore interrelationships between fisheries enhancement opportunities and other resource uses such as wilderness or other recreation uses. The process is scheduled to begin during 1983 and be completed by fall of 1984.

Decisions to allow or not to allow particular fisheries enhancement projects in designated wilderness will be made through the NEPA process, which will include identification and evaluation of non-wilderness alternatives, if available, and the relative impact of the proposed action on Wilderness. There will be an ample opportunity for the public to participate. Wilderness plans will be amended to allow those enhancement activities selected in the EIS record of decision.

Until this process is completed, lake enrichment, fish stocking, and stream clearing projects will be authorized in wilderness. Other types of projects will be included on a case by case basis. However, projects which were previously approved under wilderness study criteria will be allowed to continue.

Permits for temporary facilities needed in connection with fisheries research, management, or enhancement/rehabilitation projects may be issued by the Forest Supervisor. Permanent facilities require Regional Forester approval. Any authorized facilities shall be constructed in such rustic manner as to blend into the natural character of the area and be limited to those essential to the authorized activity. Camps should be located a sufficient distance from attractions or important travel routes to avoid conflicts with other visitors.

However, this plan provides input to this process through suggestions on Aquaculture use. Any aquaculture activities allowed must be in a manner that minimizes the effects on the wilderness resource. There are suggested limitations (listed below) placed on permanent facility location and construction, such as fish hatcheries, recreational cabins, and trails.

Recreation

Forest Service Recreation Cabins: Rezanof (new), Davidof, Plotnikof, and Avoss cabins will be maintained as Forest Service recreation cabins. Gar Lake and Rezanof (old) will be removed from the list of recreation cabins and posted as emergency shelters with no active maintenance.

Forest Service Trails: Maintain the Port Banks and Davidof Lake trails to a minimum level of maintenance.

The policy of "Pack It In/Pack It Out" applies to all users of South Baranof Wilderness. All non-burnable refuse will be removed from the Wilderness by the person who brought it in.

Commercial Activities Outfitter/Guides: Outfitter/guide special use permits may be issued to the extent necessary to realize the wilderness recreation opportunities of the area. However, no land-based commercial outfitter/guide operations will be permitted in the Port Banks area. The activities conducted will be compatible with non-commercial recreational use while maintaining the wilderness resource. ROS class guidelines will be used to guide management of uses.

Aquaculture: Developmental activities requiring construction of large permanent structures (fishpasses, tunnels) are suggested to be limited, particularly those that would be visible from saltwater locations. The only major hatchery facilities anticipated for the future will be the already identified site at Lake Ekaterina. The Sandy Bay Hatchery, operated by the Tlingit Haida Fisheries Development Corporation will continue to operate. Until completion of the 507(a) planning process, only lake enrichment, fish stocking, stream clearing, and egg take will be authorized. Permits for temporary facilities needed in connection with fisheries research, management, or enhancement/rehabilitation projects may be issued by the Forest Supervisor. These projects must be conducted in a manner which minimizes the effects on the wilderness resource. Lake enrichment at Falls Lake and Benzeman Lake and lake stocking are compatible activities with this alternative.

Special Uses

The Forest Service will permit the establishment of temporary facilities, subject to reasonable regulations, including: tent platforms, shelters, and other temporary facilities and equipment related to the taking of fish and wildlife. Beach log salvage will be allowed above mean high tide including the temporary use of motorized or mechanical equipment where necessary, if permanent, long-term adverse effects will not result. Beach log salvage will be consistent with the Memorandum of Understanding between the State of Alaska and the USDA Forest Service.

Cultural Resources

The Forest Service archeologist will be consulted prior to any ground disturbance activities within the Wilderness. Approval to begin these activities must be obtained from the line officer (District Ranger or Forest Supervisor) with consultation from the cultural specialist or the archeologist to prevent damage to known cultural features requiring protection.

TRACY ARM-FORDS
TERROR WILDERNESS
MANAGEMENT DIRECTION

The following management direction for the Tracy Arm-Fords Terror Wilderness was approved by the Regional Forester March 29, 1984 and except as modified by the Chief's decision on the Stikine-LeConte Appeal, is the current direction for the management of this wilderness.

(NOTE - A complete copy of the Tracy Arm-Fords Terror Environmental Assessment and Wilderness Management Direction Assessment with all appendices referenced below is on file at the Forest Supervisor's Office, Chatham Area, TNF.)

Recreation

Existing (as of December 2, 1980) public recreation cabins and shelters may continue and may be maintained or replaced. No cabins, trails, or hardened campsites so to maintain the highest and most pristine wilderness characteristics.

Trails serve visitors, and the hiking that takes place on them is a form of recreation. Trails are also required to move supplies and administrative personnel into and through the wilderness. They are acceptable improvement in wilderness when they are essential for these purposes and are a good tool for dispersing use. Trails must be constructed and maintained as they appear to be part of a country, rather than an intrusion upon it.

No new trail and cabins are anticipated at this time.

Access

The general public shall be permitted the use of snowmachines (during periods of adequate snow cover), motorboats, airplanes, and non-motorized surface transportation methods for traditional activities and for travel to and from villages and homesites. Traditional activities include recreation activities such as fishing, hunting, and hiking. Such uses are subject to reasonable regulations to protect natural or other values from damage. Traditional activities shall be allowed to continue in areas where such use has occurred, and no proof of pre-existing use will be required in order to use a snow machine, motorboat, or airplane.

Administration of activities located below mean high tides is the jurisdiction of the State of Alaska.

Special Uses

Permits for outfitting and guiding operation may be issued when the proposed use is compatible with approved resource plans and provides a needed public service, or assists in the management and utilization of National Forest resources.

Any persons were engaged in adequately providing any type of visitor service within any wilderness on or before January 1, 1979, shall be permitted to continue to provide such type of service and similar types of visitor services within that wilderness, if such services are consistent with the purposes for which the wilderness was established. (ANILCA Sec. 1307(a)).

In selecting persons to provide new visitor services, preference shall be given to the Native Corporation which the Regional Forester determines is most directly affected by the establishment of the subject wilderness and to persons who are determined as local residents.

Outfitter/Guides

Maximum size for outfitter guide parties shall be 12 persons. Larger groups may only be permitted under an approved provision in their special use permit. The

12 person party is considered economically viable and supported by representatives of the outfitter guides now using Tracy Arm-Fords Terror Wilderness. Party size limitations will not affect groups traveling exclusively on saltwater. Economic viability and maintaining the wilderness solitude provided the rationale for the party size limitation.

The number of outfitter guide permits within the wilderness area would be allowed to increase within the context of the No Action/No Change alternative. The issuance of permits would be monitored to insure that other wilderness users would not be impacted or displaced.

Permits for outfitter guides would continue to be issued where there is a demonstrated public service need unless conflicting uses develop and/or measureable damage begins to occur.

State Managed Water The uplands of the wilderness area are managed by the USDA Forest Service; but tidelands, submerged lands and water associated with the tidelands are managed by the State of Alaska. The Alaska Department of Natural Resources is now preparing a Southeast Tidelands Plan (SETAP). The SETAP planning area for 1983 will include the tidelands within the Tracy Arm-Fords Terror Wilderness. The State has requested that the two plans be developed to insure compatibility. Tideland classification into appropriate land use categories is an internal process with opportunities for public review and comment, and directs that the use of tidelands be compatible with adjacent lands and waters.

Temporary Camps Temporary facilities authorized any ANILCA Section 1316 shall include tent platforms, caches, shelters, and associated temporary structures which are directly and necessarily related to the taking of fish and wildlife but shall not include cabins.

All new facilities shall be constructed of materials which blend and are compatible with the immediate surrounding landscape. Camps shall be located at sufficient distance from attractions and off of trails to avoid conflicts with other visitors.

In an effort to minimize impacts on existing users and uses temporary camps would be located on:

Sites that are approximately one-half mile from popular anchorages.

Sites that are not currently popular campsites. These would be located and inventoried using Code-a-Site Inventory system.

Be located so that they will not constitute a significant expansion of existing uses which would degrade the wilderness character. Establishing criteria which would determine a significant expansion of existing uses will be developed as monitoring indicates levels of impacts on actual uses.

Permits will be issued using discretion concerning distances from attractions and trails.

Cultural resources Historic and prehistoric districts, sites, buildings, structures, and objects within a wilderness will be inventoried and evaluated for National Register of Historic Places (NRHP) eligibility. Inventory and evaluation work will normally be performed in a manner which does not result in site disturbance or modification, or impact other resources within wildernesses.

Cultural properties which are listed on the NRHP, or which have been evaluated against the register criteria of significance and have been determined to be eligible for listing on the NRHP, shall be considered to conform to the wilderness environment. The properties will be managed to preserve the values which established their eligibility for the NRHP.

Aquaculture

Section 507(a) of ANILCA mandates a cooperative fisheries planning process involving the State of Alaska, the Forest Service, and the non-profit aquaculture associations. The process will examine fisheries enhancement needs and opportunities and other resource uses such as wilderness or other recreation uses.

Decisions to allow or not to allow particular fisheries enhancement projects in designated wilderness will be made through the NEPA process, which will include identification and evaluation of non-Wilderness alternatives, if available, and the relative impact of the proposed action of Wilderness. There will be an ample opportunity for the public to participate. Wilderness plans will be amended to allow those enhancement activities selected in the EIS record of decision.

Until this process is completed, only lake enrichment, fish stocking, and stream clearing projects will be authorized in wilderness. Other types of projects which were previously approved under wilderness study criteria will be allowed to continue.

Permits for temporary facilities needed in connection with fisheries research, management, or enhancement/rehabilitation projects may be issued by the Forest Supervisor. Permanent facilities shall be constructed in such rustic manner as to blend into the natural character of the area and be limited to those essential to the authorized activity. Camps should be located a sufficient distance from attractions or important travel routes to avoid conflicts with other visitors

Flora

Both climax and successional biotic communities will be recognized as natural and desirable and ecological processes will be permitted to operate naturally except as modified by the following:

The natural process of healing would be the preferred method of handling adverse features such as erosion and soil compaction. Under unusual circumstances, structural or vegetative assistance may be considered. These measures should be considered as a last resort. Normally primitive means would be used to accomplish the project.

Management would strive toward maintenance of natural setting for native plants and animals. Inventories would be made to identify any threatened, endangered, or unique vegetation based upon identified needs and/or likelihood of occurrence.

Wildlife

Sport hunting, trapping, and fishing opportunities in a wilderness setting, including the harvest of wildlife and fish designated as game animals, furbearers, or game birds by or under State laws would be available. Coordination with State game and fish agencies would be sought to ensure maintenance of the wilderness resource.

Subsistence uses

Consistent with sound management principles, recognized scientific principles, the conservation of healthy populations of fish and wildlife, and the purposes for which this unit was established, the utilization of public lands of Alaska

when it is necessary to restrict taking in order to assure the continued viability of a fish or wildlife population, or the continuation of subsistence uses of such population. The taking of such population for nonwasteful subsistence uses shall be given preference on the public lands over other consumptive uses (ANILCA Sec 802) "In determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands under any provision of law authorizing such actions, the head of the Federal agency having primary jurisdiction over such lands, or his designee shall evaluate the effect of such use, occupancy, or disposition on subsistence uses and needs, the availability of other lands for the purposes sought to be achieved, and other alternatives which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes." (ANILCA Sec 810).

Responsibility for completing the evaluation of effects of land use decisions on subsistence uses is delegated to the line officer who has the authority to make and carry out the particular land use decision. Such evaluation of the effects of land use decision shall be incorporated into the NEPA process.

The line officer will notify the Regional Forester that a determination has been made that a proposed management action would significantly restrict subsistence uses. Authority to approve management actions which would significantly restrict subsistence uses is reserved to the Regional Forester.

Fire Management

The use of prescribed fire is not anticipated and management direction is to extinguish all wildfires.

APPENDIX N

Suitability Classification

FINAL TENTATIVELY SUITABLE PROCESS FOR THE TLMP REVISION

1920-2-4 (G-12-c)

TONGASS LAND MANAGEMENT PLAN

CRITERIA FOR DETERMINING THE TENTATIVELY SUITABLE

FOREST LAND CLASSIFICATION

JUNE 14, 1988

RECOMMENDED BY:

/s/ Donald C. Lyon

6-14-88

DONALD C. LYON

Date

Forest Plan Team Leader

Tongass National Forest

APPROVED BY:

/s/ Mike Lunn

6-14-88

J. MICHAEL LUNN

Date

Forest Supervisor

Ketchikan Area

/s/ Gary Morrison

6-15-88

GARY MORRISON

Date

Forest Supervisor

Chatham Area

/s/ Ned Pence (for)

6-14-88

DOUGLAS K. BARBER

Date

Acting Forest Supervisor

Stikine Area

TENTATIVELY SUITABLE FOREST LAND CLASSIFICATION

The TLMP Revision IDT's recommendation on the Criteria for Determining the Tentatively Suitable Forest Land Classification was sent to each Area on April 28, 1988 for review. Review comments have been incorporated and the criteria have been approved by the Tongass National Forest Supervisors. The criteria listed in this document will be used in the Draft Forest Plan to determine the tentatively suitable forest land classification.

TASK FORCE OBJECTIVE

On October 23, 1987 a task force was established to determine the criteria for the tentatively suitable forest land in conjunction with the Revision of the Tongass National Forest Land Management Plan. The task force is comprised of a technical working group and consultant/reviewer group. Working group members are:

Bill Wilson	-	IDT Timber Planner - Chairman
Bob Gerdes	-	Stikine Area Forester
Dave Loggy	-	Ketchikan Area Soils Scientist
Jim Russell	-	Chatham Area Silviculturist
Jim Douglas	-	SAF Representative

Consultant/reviewer members are:

Paul Alaback	-	Forest Science Lab
Don Finney	-	Alaska Loggers Association
Bart Koehler	-	SEACC

The role of the task force is limited to identifying the biologic criteria and availability of forest lands to be considered as capable of producing industrial wood products as described in the National Forest Management Act (NFMA) Regulations 36 CFR 219.14 (a)(1) through (4). These forested lands are those that are producing or capable of producing crops of industrial wood and (a) have not been withdrawn by Congress, the Secretary, or the Chief; (b) where existing technology and knowledge is available to ensure timber production without irreversible damage to soils, productivity, or watershed conditions; (c) existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that adequate restocking can be attained within 5 years after final harvest; and (d) adequate information is available to project responses to timber management activities. The determination of lands actually suitable for timber production will begin in the analysis of the management situation (AMS) and culminate with the Forest Plan. Suitable lands in the Forest Plan will constitute the land base for determining the allowable sale quantity (ASQ) and all vegetation management practices associated with timber production. The AMS and each alternative in the Forest Plan will be limited to no more than the acres identified as tentatively suitable.

National Forest Management Act Regulations 36 CFR 219.14 - Timber Resource Land Suitability is provided for review. This task force is responsible for Section (a)(1) through (4).

36 CFR Part 219
NATIONAL FOREST SYSTEMS LAND AND RESOURCE MANAGEMENT PLANNING

36 CFR Part 219.14 - Timber Resource Land Suitability

During the forest planning process, lands which are not suited for timber production shall be identified in accordance with the criteria in paragraphs (a) through (d) of this section.

TENTATIVELY SUITABLE (BIOLOGICALLY CAPABLE)

(a) During the analysis of the management situation, data on all National Forest System lands within the planning area shall be reviewed, and those lands within any one of the categories described in paragraphs (a)(1) through (4) of this section shall be identified as not suited for timber production -

- (1) The land is not forest land as defined in 219.3.
- (2) Technology is not available to ensure timber production from the land without irreversible resource damage to soils productivity, or watershed conditions.
- (3) There is not reasonable assurance that such lands can be adequately restocked as provided in 219.27(c)(3).
- (4) The land has been withdrawn from timber production by an Act of Congress, the Secretary of Agriculture or the Chief of the Forest Service.

ECONOMICALLY SUITABLE

(b) Forest lands other than those that have been identified as not suited for timber production in paragraph (a) of this section shall be further reviewed and assessed prior to formulation of alternatives to determine the costs and benefits for a range of management intensities for timber production. For the purpose of analysis, the planning area shall be stratified into categories of land with similar management costs and returns. The stratification shall consider appropriate factors that influence the costs and returns such as physical and biological conditions of the site and transportation requirements. This analysis shall identify the management intensity for timber production for each category of land which results in the largest excess of discounted benefits less discounted costs and shall compare the direct costs of growing and harvesting trees, including capital expenditures required for timber production, to the anticipated receipts to the government, in accordance with 219.12 and paragraphs (b)(1) through (b)(3) of this section.

- (1) Direct benefits are expressed as expected gross receipts to the government. Such receipts shall be based upon expected stumpage prices and payments-in-kind from timber harvest considering future supply and demand situation for timber and upon timber production goals of the regional guide.
- (2) Direct costs include the anticipated investments, maintenance, operating, management, and planning costs attributable to timber production activities, including mitigation measures necessitated by the impacts of timber production.
- (3) In addition to long-term yield, the financial analysis must consider costs and returns of managing the existing timber inventory.

SUITABLE by MANAGEMENT OBJECTIVES

(c) During formulation and evaluation of alternative as required in 219.12 (f) and (g), combinations of resource management prescriptions shall be defined to meet management objectives for the various multiple uses including outdoor recreation, timber, watershed, range, wildlife and fish, and wilderness. The formulation and evaluation of each alternative shall consider the costs and benefits of alternative management intensities for timber production as identified pursuant to paragraph (b) of this section in accordance with 219.12 (f). Lands shall be tentatively identified as not appropriate for timber production to meet objectives of the alternative being considered if -

- (1) Based upon a consideration of multiple-use objectives for alternative, the land is proposed for resource uses that preclude timber production, such as wilderness;
- (2) Other management objectives for alternative limit timber production activities to the point where management requirements set forth in 219.27 cannot be met; or
- (3) The lands are not cost-efficient, over the planning horizon, in meeting forest objectives, which include timber production.

REVIEW OF NOT SUITED

(d) Lands identified as not suited for timber production in paragraph (a) of this section and lands tentatively identified as not appropriate for timber production in paragraph (c) of this section shall be designated as not suited for timber production in the preferred alternative. Designation in the plan of lands not suited for timber production shall be reviewed at least every 10 years. Such lands may be reviewed and redesignated as suited for timber production due to changed conditions at any time, according to the criteria in paragraphs (a) and (c) of this section, and according to the procedures for amendment or revision of the forest plan in 219.10 (f) and (g).

NFMA Sections cited in Part 219.14 (a)(1) through (4) -

219.3 Definitions and Terminology

Forest Land: Land at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and not currently developed for non-forest use. Lands developed for non-forest use include areas for crops, improved pasture, residential, or administrative areas, improved roads of any width, and adjoining road clearing and powerline clearing of any width.

219.27 Management Requirements - (c) Silvicultural Practices

(3) When trees are cut to achieve timber production objectives, the cuttings shall be made in such a way as to assure that the technology and knowledge exists to adequately restock the lands within 5 years after final harvest. Research and experience shall be the basis for determining whether the harvest and regeneration practices planned can be expected to result in adequate restocking. Adequate restocking means that the cut area will contain the minimum number, size, distribution, and species composition of regeneration as specified in regional silvicultural guides for each forest type. Five years after final harvest means 5 years after clearcutting, 5 years after final overstory removal in shelterwood cutting, 5 years after the seed tree removal cut in seed tree cutting, or 5 years after selection cutting.

BOLD TYPE is not part of the NFMA Regulation. Included for clarity only.

PROCESS FOR IDENTIFICATION OF LANDS SUITABLE FOR TIMBER PRODUCTION

Is land forested? NO Unsuitable (nonforest)
----->

YES

Is land capable of producing crops of industrial wood?	NO ----->	Unsuitable (nonindustrial wood)
---	--------------	------------------------------------

YES

Is irreversible damage likely YES Unsuitable (irreversible
to occur? -----> damage)

NO

Can area be restocked within	NO	Unsuitable (restocked)
5 years?	----->	

YES

Is adequate response information available? NO -----> Unsuitable (no information)

YES

Is land withdrawn from timber production? YES Unsuitable (withdrawn)
----->

NO

Then land is tentatively suitable for timber production -

Is land selected in alternative	NO	Not appropriate (unsuitable
for timber production?	----->	in preferred alternative and Forest plan).

YES

Then land is suitable for timber production -

PROCESS 1. Is Land Forested?

Forest Land. Land at least 10-percent occupied by forest trees or formerly having had such tree cover and not currently developed for nonforest use. Forest trees are defined as woody plants having a well-developed stem and usually more than 12 feet in height at maturity. Lands developed for nonforest use include areas for crops, improved pasture, residential or administrative areas, improved (constructed) roads of any width and adjoining road clearing, and powerline clearing of any width. The term occupancy, when used to define forest land, shall be measured by canopy cover of live forest trees at maturity. The minimum area for classification of forest land is 5 acre or greater, consistent with Regional mapping standards. Unimproved roads, trails, streams, and clearings in forest areas are classified as forest, if they are less than 120 feet in width.

Tentatively Suitable Criteria

1. Tongass National Forest lands meeting the definition will be classified as forested.

a. Vegetative Inventory - National Forest lands identified as having a forested Cover Type (CT) in the Forest Plan Geographic Information System (GIS) Data Base includes all existing forest types meeting the 10% crown cover and currently nonstocked forest land formerly having had 10% crown cover.

<u>Codes</u>	<u>Description</u>
F	Forested

b. Soils Inventory - National Forest lands with soils inventoried as having forested plant association in the Forest Plan GIS Data Base will be compared to the vegetative inventory to insure all nonwilderness forested lands are identified. Forested lands in the Soil Mapping Unit (SMU) are identified in the Cover Type of the SMU look-up table (SMUT).

<u>Codes</u>	<u>Descriptions</u>
F	Forested

c. Lands Inventory - National Forest lands currently developed for nonforest use, including administrative sites and powerline clearings, will be identified in the Forest Plan GIS Data Base and classified as unsuitable. Forested encumbered National Forest lands satisfy the forested criteria until selections are conveyed to the State of Alaska or Native Corporations.

d. Roads Inventory - Existing specified roads and adjoining road clearings on National Forest lands will be identified in the Forest Plan GIS Data Base and classified as unsuitable. The existing road status (STATUS) is:

<u>Code</u>	<u>Description</u>
E	Existing

NOTE: All resource inventory information will not be available for existing Wilderness. As a minimum, the vegetative inventory will be used to identify forested lands within Wilderness.

PROCESS 2. Is Land Capable of Producing Crops of Industrial Wood?

Forest Land Capable of Producing Industrial Wood. Lands that are not capable of producing crops of industrial wood are by definition to be classified as unsuitable for timber production. Species of trees which are not currently utilized or not expected to be utilized within the next 10 years, constitute the primary criterion for assigning lands to this category. This does not preclude, however, the formulation of an alternative to display management opportunities, if a demand develops.

Tentatively Suitable Criteria

1. Tongass National Forest lands meeting the criteria of forested (Process 1), but are not capable of producing industrial wood products, will be classified as unsuitable.

a. Vegetative Inventory - Mature stands of nonindustrial forest types will be identified in the Forest Plan GIS Data Base and classified as unsuitable.

Forest Type (FT) codes are:

<u>Codes</u>	<u>Description</u>
P	Black Cottonwood
L	Lodgepole Pine
A	Alder

NOTE: A review of the soils GIS inventory indicates that there are no SMUs which have occurrences of Plant Associations with 50% or greater of the noncommercial species listed above on the Tongass National Forest. The vegetation inventory will be used to identify unsuitable lands in both wilderness and nonwilderness.

Physically Suitable Forest Land. Forest lands physically suitable for timber production are lands where technology is available to ensure timber production, without irreversible resource damage to soil productivity or watershed conditions and lands where there is reasonable assurance that they can be adequately restocked within 5 years. The latest developments in technology that are documented in current research and experience are to be considered in these determinations. Economic efficiency is not a factor in the determination of physical suitability.

The next two steps (Process 3 and Process 4) are subparts of the Physically Suitable screen.

PROCESS 3. Is Irreversible Damage Likely to Occur?

Irreversible Damage. The first test of physically suitable forest land is for irreversible damage. This test shall be performed by an interdisciplinary team. It shall determine if activities involved in timber production can be carried out on forest land without irreversible resource damage to soil productivity or watershed conditions. As a minimum, activities considered should include access, harvesting, slash disposal, and regeneration. If these items can be accomplished with available technology and without impairment to the site or drainage, the land shall be considered tentatively suitable. Available technology is that technology that is in use or which current research and experience indicates is feasible to use. Current research and experience should indicate that the technology is feasible to use successfully for the site, species, and other factors involved. Current does not have to be within the Forest or Region.

Tentatively Suitable Criteria

1. Tongass National Forest lands meeting the criteria of forested (Process 1) and capable (Process 2), but cannot be managed for industrial wood products without irreversible resource damage, will be classified as unsuitable.

a. Soil Inventory - Soils identified as meeting criteria for irreversible resource damage will be identified in the Forest Plan GIS Data Base and classified as unsuitable.

(1) SMUs that are unsuitable will be identified in an interpretation lookup table for very high (code 4) mass movement probability rating.

(2) Those SMUs in the table having high (code 3) mass movement probability ratings will be identified as needing technology capable of supplying partial or full suspension over nearly the entire length of the yarding distance to ensure timber production without irreversible resource damage to soil productivity or watershed conditions. These lands satisfy the criteria for tentatively suitable, but will continue to be tracked to insure that alternatives include the appropriate logging system.

(3) SMUs with any occurrence of McGilvery soils will be still meet the criteria for tentatively suitable in this process, but will be identified as requiring harvest systems capable of at least partial suspension over nearly the entire length of the yarding distance.

Classes of McGilvery Soils

HOCL
MCG
MCGF
MCGC

NOTE: The soils inventory is not available for all existing Wilderness. As a minimum, the Digital Elevation Model (DEM) will be used to identify forested lands (from the vegetative inventory) with slopes 75% or greater. These lands will be classified as unsuitable.

PROCESS 4. Can Area be Restocked Within 5 years?

Restocking Within 5 years. The second test of physically suitable forest land (after irreversible damage discussed in PROCESS 3) is whether there is reasonable assurance that the remaining forest lands can be adequately restocked within 5 years of final harvest, based on existing technology and knowledge. Current research and experience shall be the basis for determining whether the practice planned can be expected to be successful at the time final harvest is planned. If existing knowledge is inadequate to determine which practices will be successful on certain lands, but research is underway which should resolve this question prior to when final harvest is planned; then, the applicable lands may be included as tentatively suitable, but shall be maintained as a separate, noninterchangeable component of the allowable sale quantity. For the purpose of this test, final harvest is defined in 36 CFR 219.27(c)(3). Such assurance applies to normal conditions for the site and does not constitute a guarantee. Abnormal conditions, such as drought, disease, or other unplanned events, may preclude meeting this requirement. Forest lands failing to meet this test shall be classed as unsuitable for timber production.

Tentatively Suitable Criteria

1. Tongass National Forest lands meeting the criteria of forested (Process 1), capable (Process 2), and not causing irreversible resource damage (Process 3), but restocking cannot be assured within 5 years, will be classified as unsuitable.

a. Soils Inventory - Soils Mapping Units not restockable will be identified in the Forest Plan GIS Data Base and are classified as unsuitable. These include:

(1) SMUs with greater than 41% McGilvery Series.

(2) SMUs in the data base identified with the dominant plant associations as listed below can be restocked but require special technology to meet restocking within 5 years. These plant associations will satisfy the restocking criteria for tentatively suitable, but will be tracked to insure that alternatives include the cost of these special restocking requirements (planting and site preparation).

<u>Code</u>	<u>Description</u>
330	Spruce - Devils Club
335	Spruce - Devils Club/Salmon Berry
340	Spruce - Devils Club/Skunk Cabbage
350	Spruce - Alder
380	Spruce - Salmon Berry
800	Spruce - Black Cottonwood/Alder
810	Spruce - Black Cottonwood/Willow
830	Spruce - Cottonwood/Devils Club
840	Spruce - Cottonwood/Alder-Devils Club
850	Spruce - Cottonwood/Blueberry-Devils Club

NOTE: The soils inventory is not available for all existing Wilderness. The vegetation layer will be used to establish a correlation between soils and vegetation outside of wilderness to be applied within wilderness.

Inadequate Response Information. Forest land shall be classified as unsuitable for timber production, if there is not adequate information available, based on current research and experience, to project response to timber management practices. These lands shall be identified as needing further inventory, research, or information and shall not be considered as part of the tentatively suitable land base, until such time that adequate response data are available.

Give special attention to lands classified as incapable of producing 20 cubic feet/acre/year if they formerly met this criterion and were included in the timber base. In those situations where significant acreages are involved, the lands shall be considered tentatively suitable for timber production. The yield projections for these lands shall be limited to regeneration harvest practices, where response data to intensive management practices is inadequate, during the development of management prescriptions.

Tentatively Suitable Criteria

1. Tongass National Forest lands meeting the criteria of forested (Process 1), capable (Process 2), not causing irreversible resource damage (Process 3), and restocking assured within 5 years (Process 4), but have inadequate response information, will be classified as unsuitable.

a. Vegetative Inventory - Low site forested lands that have never been managed for industrial wood products have no response information and will be identified in the Forest Plan GIS Data Base and classified as unsuitable. These include forested lands with Forest Productivity (FPROD) identified as:

<u>Codes</u>	<u>Description</u>
A	Low Productivity due to Alder
G	Low Productivity due to Glacier Forest
H	Low Productivity due to High Elevation
M	Low Productivity due to Muskeg
R	Low Productivity due to Rock cover
S	Low Productivity due to Recurrent Slide Zone
T	Low Productivity due to Willow
L	Low Productivity due to Low Site Index

b. Soils Inventory - Soils with inadequate response information will be identified in the Forest Plan GIS Data Base and classified as unsuitable. These include:

(1) All Soil Mapping Units having site index of less than 40 (on a 50 year base).

(2) Soil Mapping Units which have never been logged and have no response information available.

<u>Code</u>	<u>Description</u>
305	Spruce - Myrica Gale/Sedge
315	Spruce - Willow
325	Spruce - Blueberry/Willow

NOTE: The soils inventory will not be available for all existing Wilderness. As a minimum, the vegetative inventory will be used to identify land with inadequate response information.

PROCESS 6. Is Land Withdrawn from Timber Production?

Forest Land Withdrawn From Timber Production. Lands designated by the Congress, the Secretary, or the Chief for purposes that preclude timber production are to be classified as unsuitable. The act, order, or decision must include a legal description of the designated land, or a reference to a map, pending boundary survey and description, and include an effective date. Congressionally designated wilderness study areas and roadless areas endorsed by the Administration for wilderness classification are also withdrawn from timber production. Examples are units of the National Wilderness Preservation System, Primitive Areas, and Research Natural Areas. No other RARE II lands shall be considered withdrawn unless an individual State wilderness act so designates. Lands not withdrawn shall be further considered for timber production suitability.

Management objectives for Experimental Forests shall be obtained from the Station Director. Where objectives preclude timber production, the areas shall be considered withdrawn.

Tentatively Suitable Criteria

1. Tongass National Forest lands meeting the criteria of forested (Process 1), capable (Process 2), not causing irreversible resource damage (Process 3), restocking assured within 5 years (Process 4), and having adequate response information (Process 5), but are withdrawn from timber management, will be classified as unsuitable.

a. Administrative Inventory - National Forest Wilderness and Monument Areas identified in the Forest Plan GIS Data Base. Forested land within these areas will be classified as unsuitable.

b. Boundaries Inventory - Existing Research Natural Areas, Enacted Municipal Watersheds, and Experimental Forest identified in the Forest Plan GIS Data Base are classified as withdrawn. These include.

Research Natural Areas:

Cape Fanshaw
Dog Island
Limestone Inlet
Old Tom Creek
Pack Creek
Red River
Gambier Bay

Municipal Watersheds:

Ketchikan
Petersburg
Sitka

Experimental Forest:

Young Bay Experimental Forest
Maybeso Experimental Forest

Tentatively Suitable Forest Lands. Tentatively suitable lands, identified in accordance with the process, shall be fixed input to the Forest planning model in the establishment and evaluation of benchmarks and alternatives, unless trade-offs, such as wilderness areas, are to be analyzed.

The criteria provided to determine the tentatively suitable forest land base is for modeling purposes. The timber schedule in the Revised Forest Plan will be limited to no more than the acres identified as tentatively suitable. Site specific inspection during implementation may indicate that exceptions to the Forest wide criterion are necessary for project implementation. These exceptions are valid provided the assessment is made through the National Environmental Policy Act process.

Tentatively Suitable Land Classification

	Not Suitable for Timber Production (acres)	Totals (acres)
I. Total National Forest Area		16,955,945
II. Non-Forested Area		7,331,085
Fresh Water	267,649	
Non-forest lands	6,958,823	
Developed for purposes other than timber production	14,451	
III. Forest Lands		9,624,860
Not capable of growing industrial wood products	48,501	
Irreversible damage likely to occur	850,678	
Regeneration difficulty	97,016	
Inadequate response information	3,029,905	
Withdrawn forest lands		
Existing Wilderness	2,212,658	
Existing Research Natural Areas	20,915	
Existing Experimental Forest	14,170	
IV. Tentatively Suitable Forest Land		3,065,976

APPENDIX O

Timber Yield Tables

APPENDIX O - TIMBER YIELD TABLES

The following tables depict timber yield on the Tongass National Forest by administrative areas (Ketchikan, Stikine and Chatham) by low, medium and high site classifications for stands without and with precommercial thinning prescriptions. Culmination of mean annual increment (CMAI) is depicted by the last column in the tables whereby merchantable volume in cubic feet per ten year growth period begins to fall off with age. At this point in the life of the tree, the average annual growth in volume is equal to, or less than the average growth in volume over the life of the tree. This measurement represents the point at which the annual growth rate begins to slow as compared to the average rate of growth during all previous years. Optimum rotation age is at the point at which the CMAI is achieved. Site index values utilized for the development of the timber yield tables is based on the Farr site index variables.

Two sets of tables are contained in this appendix. The first set is that used in the yield determinations for the Revision and represent less than fully stocked stands. Research in Southeast has determined that on most reestablished stands, 100% restocking is not possible due to natural conditions. The second set of tables represent 100% stocking and is contained in this appendix as a record for the basis of the tables used in the Revision.

STIKINE AREA
LOW SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	Trees Per Acre	Dominate Tree Height	Quadratic Mean Diameter	Merchantable C.F. Volume	B.F. Volume	Mean Annual Increment
		(feet)	(inches)	(100)	(1000)	(net c.f.)
10	5685	11	0.3	0.0	0.0	0.0
20	5593	21	1.3	0.0	0.0	0.0
30	3753	31	2.6	0.1	0.0	0.4
40	2149	43	3.9	0.9	0.3	2.2
50	1449	52	5.0	2.3	0.6	4.7
60	1064	62	6.0	6.8	1.7	11.4
70	829	70	6.9	16.2	4.2	23.5
80	672	78	7.9	27.8	8.4	35.4
90	567	85	8.7	38.6	13.7	43.9
100	492	91	9.5	49.9	18.5	51.0
110	431	97	10.3	60.2	23.6	56.3
120	386	103	11.1	70.4	28.7	60.6
130	349	108	11.8	79.7	33.7	63.3
140	318	112	12.5	88.7	38.5	65.7
150	292	117	13.2	96.9	43.3	67.2
160	270	120	13.9	104.2	47.3	68.0

CHATHAM AREA
LOW SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	Trees Per Acre	Dominate Tree Height	Quadratic Mean Diameter	Merchantable C.F. Volume	B.F. Volume	Mean Annual Increment
		(feet)	(inches)	(100)	(1000)	(net c.f.)
10	12618	10	0.4	0.0	0.0	0.0
20	10637	19	1.3	1.6	0.8	0.0
30	4065	29	2.5	1.9	0.9	5.5
40	2067	38	3.9	3.0	1.1	7.4
50	1336	48	5.1	4.9	1.8	9.8
60	1028	58	6.0	8.7	3.0	14.5
70	823	66	6.9	16.3	4.4	23.7
80	678	74	7.9	27.9	8.5	35.7
90	573	82	8.7	36.5	13.4	41.4
100	491	88	9.6	50.1	18.4	51.3
110	425	96	10.4	61.7	24.3	57.8
120	380	102	11.2	71.3	30.1	61.3
130	340	108	11.9	81.0	35.0	64.3
140	309	113	12.8	89.6	39.7	66.3
150	280	119	13.6	98.2	44.7	68.0
160	261	122	14.2	107.0	49.2	69.7
170	243	127	14.9	113.8	53.6	70.2

KETCHIKAN AREA
LOW SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	Trees Per Acre	Dominate Tree Height	Quadratic Mean Diameter	Merchantable C.F. Volume	B.F. Volume	Mean Annual Increment
		(feet)	(inches)	(100)	(1000)	(net c.f.)
10	4826	16	0.6	0.0	0.0	0.0
20	4812	26	1.4	0.1	0.0	0.5
30	3877	35	2.5	0.8	0.1	2.4
40	2685	46	3.7	2.7	0.6	6.8
50	1656	56	4.9	7.9	1.9	15.8
60	1130	66	6.1	17.5	4.8	29.1
70	816	73	7.4	27.6	9.0	40.1
80	618	82	8.5	39.2	14.1	50.0
90	495	90	9.7	51.7	19.6	58.7
100	409	96	10.8	63.7	25.5	65.3
110	352	102	11.8	74.4	31.3	69.6
120	308	107	12.8	85.1	37.1	73.3
130	275	109	13.8	94.8	42.6	75.3
140	247	117	14.8	103.7	47.7	76.7
150	226	120	15.6	111.4	52.3	77.3
160	208	122	16.4	118.4	56.8	77.3

STIKINE AREA
MEDIUM SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	Trees Per Acre	Dominant Tree Height	Quadratic Mean Diameter	Merchantable C.F. Volume	B.F. Volume	Mean Annual Increment
		(feet)	(inches)	(100)	(1000)	(net c.f.)
10	5685	11	0.3	0.0	0.0	0.0
20	4836	23	1.9	0.0	0.0	0.0
30	2402	36	3.7	0.5	0.1	1.3
40	1386	49	5.1	1.4	0.4	3.6
50	973	61	6.3	5.8	1.2	11.7
60	742	72	7.4	16.7	4.4	27.7
70	598	82	8.4	30.7	10.0	44.7
80	501	90	9.4	45.4	16.6	57.9
90	430	98	10.4	59.5	23.1	67.6
100	377	104	11.2	72.3	29.6	74.2
110	335	111	12.1	84.4	36.4	79.0
120	300	116	13.0	95.0	42.5	81.8
130	272	121	13.8	104.8	48.2	83.3
140	249	126	14.6	113.7	53.5	84.2
150	229	130	15.4	121.8	58.4	84.4
160	213	134	16.1	129.0	63.0	84.2

CHATHAM AREA
MEDIUM SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	Trees Per Acre	Dominate Tree Height	Quadratic Mean Diameter	Merchantable C.F. Volume	B.F. Volume	Mean Annual Increment
		(feet)	(inches)	(100)	(1000)	(net c.f.)
10	12618	10	0.4	0.0	0.0	0.0
20	6891	22	1.9	1.6	0.8	7.2
30	2333	33	3.7	2.7	1.0	7.9
40	1406	46	5.0	3.9	1.5	9.7
50	961	57	6.3	10.8	2.7	21.6
60	747	70	7.4	19.6	6.5	32.7
70	595	81	8.5	33.3	11.7	48.4
80	490	91	9.5	49.2	18.4	62.8
90	418	99	10.6	63.6	25.7	72.2
100	359	107	11.6	76.8	33.4	78.8
110	312	114	12.7	89.4	40.4	83.8
120	276	121	13.6	101.8	46.6	87.7
130	247	127	14.7	111.9	53.6	88.9
140	225	132	15.5	120.9	59.3	89.5
150	204	137	16.5	129.9	65.3	90.0
160	188	142	17.4	138.0	70.3	90.0

KETCHIKAN AREA
MEDIUM SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	Trees Per Acre	Dominate Tree Height	Quadratic Mean Diameter	Merchantable C.F. Volume	B.F. Volume	Mean Annual Increment
		(feet)	(inches)	(100)	(1000)	(net c.f.)
10	4821	16	0.6	0.0	0.0	0.0
20	4483	28	1.8	0.4	0.0	1.9
30	2744	40	3.3	1.7	0.3	5.0
40	1569	53	4.9	5.5	1.2	13.7
50	1033	64	6.3	15.7	4.5	31.3
60	734	76	7.7	29.0	9.9	48.3
70	557	85	9.1	44.5	16.3	64.7
80	438	95	10.4	59.5	23.9	75.8
90	361	103	11.7	74.1	31.7	84.3
100	302	110	13.0	88.3	39.2	90.5
110	264	116	14.2	100.1	46.4	93.7
120	234	122	15.3	111.1	53.3	95.6
130	209	127	16.5	121.8	59.7	96.7
140	189	132	17.6	131.2	65.7	97.1
150	173	137	18.6	139.4	71.0	96.6
160	159	141	19.6	147.3	76.3	96.1

STIKINE AREA
HIGH SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	Trees Per Acre	Dominate Tree Height	Quadratic Mean Diameter	Merchantable C.F. Volume	B.F. Volume	Mean Annual Increment
		(feet)	(inches)	(100)	(1000)	(net c.f.)
10	5685	11	0.3	0.0	0.0	0.0
20	3688	26	2.5	0.1	0.0	0.4
30	1588	41	4.7	0.7	0.2	2.0
40	992	57	6.2	3.5	0.7	8.7
50	719	71	7.5	14.1	3.8	28.2
60	562	83	8.8	33.0	10.9	54.9
70	460	94	9.9	52.5	19.5	76.4
80	391	103	11.0	70.3	28.4	89.8
90	336	111	12.1	85.7	36.8	97.4
100	298	118	13.1	99.3	44.8	101.7
110	265	125	14.0	110.7	52.0	103.7
120	239	130	15.0	121.0	58.4	104.1
130	217	136	15.9	130.5	64.3	103.7
140	198	140	16.8	138.3	69.6	102.4
150	183	144	17.7	145.6	74.5	100.9
160	170	148	18.5	152.3	79.0	99.3

CHATHAM AREA
HIGH SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	Trees Per Acre	Dominant Tree Height	Quadratic Mean Diameter	Merchantable C.F. Volume	B.F. Volume	Mean Annual Increment
		(feet)	(inches)	(100)	(1000)	(net c.f.)
10	12618	10	0.4	0.0	0.0	0.0
20	4444	25	2.4	1.6	0.9	7.3
30	1592	39	4.7	3.0	1.2	8.8
40	1007	55	6.2	5.7	2.2	14.2
50	718	70	7.6	17.5	5.8	34.9
60	556	83	8.8	34.6	12.0	57.8
70	450	95	10.0	55.8	21.5	81.2
80	375	106	11.3	73.8	31.5	94.1
90	321	115	12.4	87.5	39.5	99.4
100	277	122	13.6	103.5	48.0	106.1
110	242	129	14.8	116.6	54.4	109.2
120	216	136	15.9	127.6	64.0	109.8
130	194	142	17.0	138.7	71.0	110.1
140	176	147	18.0	147.3	76.7	109.0
150	160	152	19.2	156.2	83.0	108.3
160	147	157	20.2	163.5	88.1	106.7

KETCHIKAN AREA
HIGH SITE
UNMANAGED EMPIRICAL YIELD TABLE

Age	Trees Per Acre	Dominate Tree Height	Quadratic Mean Diameter	Merchantable C.F. Volume	B.F. Volume	Mean Annual Increment
		(feet)	(inches)	(100)	(1000)	(net c.f.)
10	4821	16	0.6	0.0	0.0	0.0
20	3887	31	2.3	0.5	0.1	2.1
30	1976	45	4.2	3.1	0.6	9.1
40	1149	60	5.8	9.9	2.6	24.7
50	755	74	7.5	25.2	8.2	50.2
60	548	87	9.0	43.5	16.4	72.5
70	423	99	10.6	62.3	25.6	90.5
80	343	108	12.1	79.5	35.0	101.4
90	287	116	13.6	96.1	44.4	109.2
100	244	124	15.0	110.8	53.5	113.6
110	214	131	16.3	123.8	61.7	115.9
120	190	136	17.6	135.2	69.4	116.3
130	169	142	18.9	146.2	76.5	116.2
140	153	147	20.2	156.0	83.2	115.4
150	140	151	21.3	164.4	89.0	113.9
160	129	155	22.5	172.5	94.6	112.5

STIKINE AREA
MEDIUM SITE
MANAGED EMPIRICAL YIELD TABLE

Age	Trees Per Acre	Dominate Tree Height	Quadratic Mean Diameter	Merchantable C.F. Volume	B.F. Volume	Mean Annual Increment
		(feet)	(inches)	(100)	(1000)	(net c.f.)
10	5685	11	0.3	0.0	0.0	0.0
20	318	20	2.6	0.0	0.0	0.0
30	318	32	4.8	0.0	0.0	0.0
40	317	47	6.9	1.5	0.3	3.8
50	316	61	8.6	13.7	2.9	27.6
60	301	73	9.9	29.0	9.0	48.2
70	279	84	11.1	44.4	15.8	64.5
80	261	94	12.1	58.5	23.0	74.7
90	245	102	13.0	71.6	30.2	81.4
100	231	109	13.9	84.6	37.2	86.7
110	221	115	14.8	96.1	44.2	90.0
120	210	121	15.6	107.6	50.9	92.6
130	199	126	16.3	117.6	56.6	93.5
140	190	131	17.0	126.3	61.9	93.5
150	180	135	17.7	133.9	66.7	92.9
160	170	138	18.4	140.9	71.2	91.9

CHATHAM AREA
MEDIUM SITE
MANAGED EMPIRICAL YIELD TABLE

Age	Trees Per Acre	Dominate Tree Height	Quadratic Mean Diameter	Merchantable C.F. Volume	B.F. Volume	Mean Annual Increment
		(feet)	(inches)	(100)	(1000)	(net c.f.)
10	12618	10	0.4	0.0	0.0	0.0
20	386	18	2.1	0.0	0.0	6.7
30	386	31	4.1	1.1	0.2	7.4
40	383	45	6.4	4.5	1.2	14.5
50	376	59	8.2	12.4	3.9	27.4
60	351	72	9.6	26.0	8.0	45.5
70	321	84	10.8	38.8	14.5	58.2
80	299	93	11.7	51.2	20.6	67.0
90	281	102	12.6	72.4	26.6	83.7
100	265	109	13.5	84.8	36.9	88.3
110	254	115	14.2	95.3	43.6	90.4
120	244	121	14.9	106.9	50.1	93.0
130	229	125	15.5	114.6	54.6	92.0
140	216	130	16.1	121.4	58.7	90.8
150	204	134	16.8	128.0	62.7	89.7
160	190	137	17.5	134.3	67.0	88.4

KETCHIKAN AREA
MEDIUM SITE
MANAGED EMPIRICAL YIELD TABLE

Age	Trees Per Acre	Dominate Tree Height	Quadratic Mean Diameter	Merchantable C.F. Volume	B.F. Volume	Mean Annual Increment
		(feet)	(inches)	(100)	(1000)	(net c.f.)
10	4821	16	0.6	0.0	0.0	0.0
20	319	29	3.5	0.4	0.0	1.9
30	318	41	5.9	2.1	0.4	6.3
40	318	55	8.1	10.9	2.1	27.1
50	302	66	9.8	25.8	7.4	51.6
60	279	78	11.2	42.4	15.2	70.5
70	255	89	12.5	57.1	22.4	82.9
80	238	98	13.6	71.7	29.8	91.4
90	223	106	14.6	86.6	38.1	98.4
100	209	114	15.7	100.4	46.1	103.0
110	196	120	16.7	113.6	54.1	106.4
120	182	126	17.8	125.0	61.4	107.6
130	169	131	18.7	134.3	67.1	106.7
140	158	136	19.7	142.9	72.7	105.7
150	148	140	20.4	149.6	77.4	103.8
160	139	144	21.3	156.1	81.9	101.8

STIKINE AREA
HIGH SITE
MANAGED EMPIRICAL YIELD TABLE

Age	Trees Per Acre	Dominate Tree Height	Quadratic Mean Diameter	Merchantable C.F. Volume	B.F. Volume	Mean Annual Increment
		(feet)	(inches)	(100)	(1000)	(net c.f.)
10	5685	11	0.3	0.0	0.0	0.0
20	385	23	3.1	0.0	0.0	0.0
30	385	38	5.8	0.3	0.0	1.0
40	381	56	7.9	8.4	1.7	21.0
50	346	72	9.6	29.2	8.2	58.5
60	316	86	10.9	50.7	18.8	84.5
70	291	96	12.1	68.6	28.1	99.8
80	271	106	13.2	85.8	37.5	109.5
90	252	114	14.1	100.5	46.0	114.3
100	234	122	15.1	112.9	53.5	115.8
110	216	128	16.0	123.3	60.4	115.5
120	200	133	16.8	132.6	65.3	113.9
130	186	138	17.6	141.4	71.9	112.3
140	172	142	18.5	148.7	76.9	110.0
150	160	146	19.3	155.7	81.7	107.9
160	151	150	20.2	162.0	86.1	105.6

CHATHAM AREA
HIGH SITE
MANAGED EMPIRICAL YIELD TABLE

Age	Trees Per Acre	Dominate Tree Height	Quadratic Mean Diameter	Merchantable C.F. Volume	B.F. Volume	Mean Annual Increment
		(feet)	(inches)	(100)	(1000)	(net c.f.)
10	12618	10	0.4	0.0	0.0	0.0
20	386	21	2.7	0.1	0.0	6.7
30	386	37	5.3	2.2	0.1	10.8
40	379	55	7.7	8.1	2.6	23.4
50	355	72	9.5	22.9	7.5	48.2
60	315	86	11.0	42.9	15.9	73.6
70	287	98	12.3	65.7	27.4	97.4
80	269	107	13.2	83.0	36.7	107.5
90	253	116	14.2	98.5	45.5	113.3
100	238	123	15.1	113.0	53.8	117.1
110	221	129	16.0	121.8	59.5	115.3
120	202	134	16.8	130.2	64.9	113.1
130	190	139	17.5	138.7	70.4	111.2
140	179	143	18.2	145.6	75.4	108.7
150	167	147	18.9	147.8	79.7	106.2
160	157	151	19.7	157.8	83.7	103.8

KETCHIKAN AREA
HIGH SITE
MANAGED EMPIRICAL YIELD TABLE

Age	Trees Per Acre	Dominate Tree Height	Quadratic Mean Diameter	Merchantable C.F. Volume	B.F. Volume	Mean Annual Increment
		(feet)	(inches)	(100)	(1000)	(net c.f.)
10	4821	16	0.6	0.0	0.0	0.0
20	319	31	4.0	0.5	0.1	2.1
30	318	47	6.7	4.4	0.8	13.0
40	309	63	9.1	18.3	5.0	45.8
50	284	77	11.0	39.4	13.9	78.9
60	254	90	12.6	59.5	23.7	99.1
70	231	102	14.0	78.0	33.5	113.2
80	215	111	15.2	94.6	43.4	120.7
90	198	119	16.4	111.0	53.2	126.2
100	184	127	17.5	126.0	62.4	129.2
110	168	133	18.8	138.2	70.6	129.4
120	153	139	20.1	149.0	78.0	128.2
130	142	144	21.1	158.4	84.2	125.8
140	130	149	22.2	166.8	90.1	123.4
150	122	153	23.2	174.1	95.3	120.7
160	114	157	24.1	181.2	100.3	118.2

100 PERCENT STOCKING

Ketchikan Area Site Index 60 No Thinning

Age	Number of Trees Per Acre	Dominate Tree Height (feet)	Quadratic Mean Diameter (inches)	Merch. Cubic Foot Volume (100)	Merch. Board Foot Volume (1000)	Mean Annual Increment (merch. c.f.)
10	5,447	16	0.6	0.0	0.0	0.0
20	5,431	26	1.4	0.1	0.0	0.6
30	4,376	35	2.5	0.8	0.1	2.7
40	3,031	46	3.7	3.1	0.7	7.7
50	1,869	56	4.9	8.9	2.1	17.8
60	1,275	66	6.1	19.7	5.4	32.9
70	921	73	7.4	31.7	10.4	45.3
80	698	82	8.5	45.1	16.3	56.4
90	559	90	9.7	59.7	22.9	66.3
100	462	96	10.8	73.7	30.0	73.7
110	397	102	11.8	86.5	37.0	78.6
120	348	107	12.8	99.2	44.1	82.7
130	310	109	13.8	110.5	50.9	85.0
140	279	117	14.8	121.3	57.5	86.6
150	255	120	15.6	130.8	63.5	87.2
160	235	122	16.4	139.5	69.4	87.2

100 PERCENT STOCKING

Ketchikan Area Site Index 80 No Thinning

Age	Number of Trees Per Acre	Dominate Tree Height (feet)	Quadratic Mean Diameter (inches)	Merch. Cubic Foot Volume (100)	Merch. Board Foot Volume (1000)	Mean Annual Increment (merch. c.f.)
10	5,441	16	0.6	0.0	0.0	0.0
20	5,060	28	1.8	0.4	0.0	2.2
30	3,097	40	3.3	1.7	0.3	5.6
40	1,771	53	4.9	6.2	1.4	15.5
50	1,166	64	6.3	17.7	5.1	35.3
60	828	76	7.7	32.7	11.2	54.5
70	629	85	9.1	51.1	18.8	73.0
80	494	95	10.4	68.5	27.8	85.6
90	407	103	11.7	85.6	37.0	95.1
100	341	110	13.0	102.2	46.1	102.2
110	298	116	14.2	116.4	54.8	105.8
120	264	122	15.3	129.5	63.3	107.9
130	236	127	16.5	141.9	71.4	109.1
140	213	132	17.6	153.5	79.2	109.6
150	195	137	18.6	163.6	86.2	109.0
160	179	141	19.6	173.5	93.3	108.5

100 PERCENT STOCKING

Ketchikan Area Site Index 100 No Thinning

Age	Number of Trees Per Acre	Dominate Tree Height (feet)	Quadratic Mean Diameter (inches)	Merch. Cubic Foot Volume (100)	Merch. Board Foot Volume (1000)	Mean Annual Increment (merch. c.f.)
10	5,441	16	0.6	0.0	0.0	0.0
20	4,387	31	2.3	0.5	0.1	2.4
30	2,230	45	4.2	3.1	0.7	10.3
40	1,297	60	5.8	11.2	2.9	27.9
50	852	74	7.5	28.4	9.3	56.7
60	619	87	9.0	49.1	18.5	81.8
70	477	99	10.6	71.5	29.6	102.2
80	387	108	12.1	91.6	40.7	114.5
90	324	116	13.6	111.0	51.9	123.3
100	275	124	15.0	128.2	62.9	128.2
110	242	131	16.3	143.9	72.9	130.8
120	214	136	17.6	157.6	82.4	131.3
130	191	142	18.9	170.4	91.5	131.1
140	173	147	20.2	182.5	100.2	130.3
150	158	151	21.3	192.9	108.0	128.6
160	146	155	22.5	203.2	115.6	127.0

100 PERCENT STOCKING

Stikine Area Site Index 60 No Thinning

Age	Number of Trees Per Acre	Dominate Tree Height (feet)	Quadratic Mean Diameter (inches)	Merch. Cubic Foot Volume (100)	Merch. Board Foot Volume (1000)	Mean Annual Increment (merch. c.f.)
10	6,417	11	0.3	0.0	0.0	0.0
20	6,313	21	1.3	0.0	0.0	0.0
30	4,236	31	2.6	0.1	0.0	0.4
40	2,426	43	3.9	1.0	0.3	2.5
50	1,635	52	5.0	2.6	0.7	5.3
60	1,201	62	6.0	7.7	1.9	12.9
70	936	70	6.9	18.6	4.8	26.5
80	759	78	7.9	32.0	9.7	39.9
90	640	85	8.7	44.6	16.0	49.5
100	555	91	9.5	57.7	21.7	57.6
110	486	97	10.3	70.0	27.9	63.6
120	436	103	11.1	82.0	34.1	68.4
130	394	108	11.8	92.9	40.3	71.5
140	359	112	12.5	103.8	46.4	74.2
150	330	117	13.2	113.7	52.5	75.8
160	305	120	13.9	122.7	57.8	76.7

100 PERCENT STOCKING

Stikine Area Site Index 80 No Thinning						
Age	Number of Trees Per Acre	Dominate Tree Height (feet)	Quadratic Mean Diameter (inches)	Merch. Cubic Foot Volume (100)	Merch. Board Foot Volume (1000)	Mean Annual Increment (merch. c.f.)
10	6,417	11	0.3	0.0	0.0	0.0
20	5,458	23	1.9	0.0	0.0	0.0
30	2,711	36	3.7	0.5	0.1	1.5
40	1,564	49	5.1	1.6	0.5	4.1
50	1,098	61	6.3	6.6	1.4	13.2
60	837	72	7.4	18.8	5.0	31.3
70	675	82	8.4	35.3	11.5	50.4
80	566	90	9.4	52.3	19.3	65.3
90	485	98	10.4	68.7	27.0	76.3
100	425	104	11.2	83.7	34.8	83.7
110	378	111	12.1	98.1	43.0	89.2
120	339	116	13.0	110.7	50.5	92.3
130	307	121	13.8	122.2	57.6	94.0
140	281	126	14.6	133.0	64.4	95.0
150	259	130	15.4	143.0	70.9	95.3
160	240	134	16.1	152.0	77.0	95.0

100 PERCENT STOCKING

Stikine Area Site Index 100 No Thinning

Age	Number of Trees Per Acre	Dominate Tree Height (feet)	Quadratic Mean Diameter (inches)	Merch. Cubic Foot Volume (100)	Merch. Board Foot Volume (1000)	Mean Annual Increment (merch. c.f.)
10	6,417	11	0.3	0.0	0.0	0.0
20	4,163	26	2.5	0.1	0.0	0.4
30	1,792	41	4.7	0.7	0.2	2.3
40	1,120	57	6.2	3.9	0.8	9.8
50	811	71	7.5	15.9	4.3	31.8
60	634	83	8.8	37.2	12.3	62.0
70	519	94	9.9	60.3	22.5	86.2
80	441	103	11.0	81.0	33.0	101.3
90	379	111	12.1	99.0	43.0	109.9
100	336	118	13.1	114.9	52.6	114.8
110	299	125	14.0	128.7	61.4	117.0
120	270	130	15.0	141.0	69.4	117.5
130	245	136	15.9	152.1	76.9	117.0
140	224	140	16.8	161.8	83.9	115.6
150	207	144	17.7	170.9	90.4	113.9
160	192	148	18.5	179.4	96.6	112.1

100 PERCENT STOCKING

Chatham Area Site Index 60 No Thinning

Age	Number of	Dominate	Quadratic	Merch.	Merch.	Mean
	Trees	Tree	Mean	Cubic Foot	Board Foot	Annual
	Per Acre	Height	Diameter	Volume	Volume	Increment
		(feet)	(inches)	(100)	(1000)	(merch. c.f.)
10	14,242	10	0.4	0.0	0.0	0.0
20	12,006	19	1.3	1.6	0.9	0.0
30	4,588	29	2.5	1.9	1.0	6.2
40	2,333	38	3.9	3.4	1.2	8.4
50	1,508	48	5.1	5.5	2.0	11.1
60	1,160	58	6.0	9.8	3.4	16.4
70	929	66	6.9	18.7	5.1	26.7
80	765	74	7.9	32.2	9.9	40.3
90	647	82	8.7	42.1	15.7	46.7
100	554	88	9.6	58.0	21.6	57.9
110	480	96	10.4	71.7	28.7	65.2
120	429	102	11.2	83.1	35.7	69.2
130	384	108	11.9	94.4	41.9	72.6
140	349	113	12.8	104.8	47.8	74.8
150	316	119	13.6	115.3	54.2	76.8
160	295	122	14.2	126.0	60.2	78.7

100 PERCENT STOCKING

Chatham Area Site Index 80 No Thinning

Age	Number of Trees Per Acre	Dominate Tree Height (feet)	Quadratic Mean Diameter (inches)	Merch. Cubic Foot Volume (100)	Merch. Board Foot Volume (1000)	Mean Annual Increment (merch. c.f.)
10	14,242	10	0.4	0.0	0.0	0.0
20	7,778	22	1.9	1.6	0.9	8.1
30	2,633	33	3.7	2.7	1.1	8.9
40	1,587	46	5.0	4.4	1.7	10.9
50	1,085	57	6.3	12.2	3.1	24.4
60	843	70	7.4	22.1	7.3	36.9
70	671	81	8.5	38.2	13.5	54.6
80	553	91	9.5	56.7	21.4	70.9
90	472	99	10.6	73.4	30.0	81.5
100	405	107	11.6	88.9	39.2	88.9
110	352	114	12.7	104.0	47.7	94.6
120	312	121	13.6	118.7	55.4	99.0
130	279	127	14.7	130.4	64.1	100.3
140	254	132	15.5	141.4	71.5	101.0
150	230	137	16.5	152.5	79.2	101.6
160	212	142	17.4	162.6	86.0	101.6

100 PERCENT STOCKING

Chatham Area Site Index 100 No Thinning

Age	Number of Trees Per Acre	Dominate Tree Height (feet)	Quadratic Mean Diameter (inches)	Merch. Cubic Foot Volume (100)	Merch. Board Foot Volume (1000)	Mean Annual Increment (merch. c.f.)
10	14,242	10	0.4	0.0	0.0	0.0
20	5,016	25	2.4	1.6	1.0	8.2
30	1,797	39	4.7	3.0	1.3	9.9
40	1,137	55	6.2	6.4	2.5	16.0
50	810	70	7.6	19.7	6.6	39.4
60	628	83	8.8	39.1	13.5	65.2
70	508	95	10.0	64.1	24.8	91.6
80	423	106	11.3	85.0	36.6	106.2
90	362	115	12.4	101.0	46.2	112.2
100	313	122	13.6	119.8	56.4	119.8
110	273	129	14.8	135.6	64.2	123.3
120	244	136	15.9	148.7	76.0	123.9
130	219	142	17.0	161.6	84.9	124.3
140	199	147	18.0	172.3	92.4	123.0
150	181	152	19.2	183.3	100.7	122.2
160	166	157	20.2	192.6	107.7	120.4

100 PERCENT STOCKING

Ketchikan Area Site Index 80 Precommercial Thinning						
Age	Number of Trees Per Acre	Dominate Tree Height (feet)	Quadratic Mean Diameter (inches)	Merch. Cubic Foot Volume (100)	Merch. Board Foot Volume (1000)	Mean Annual Increment (merch. c.f.)
10	5,441	16	0.6	0.0	0.0	0.0
20	360	29	3.5	0.4	0.0	2.2
30	359	41	5.9	2.1	0.4	7.1
40	357	55	8.1	12.3	2.4	30.6
50	341	66	9.8	29.1	8.4	58.2
60	315	78	11.2	47.8	17.1	79.6
70	288	89	12.5	65.5	25.9	93.6
80	269	98	13.6	82.6	34.6	103.2
90	252	106	14.6	100.0	44.5	111.1
100	236	114	15.7	116.2	54.2	116.2
110	221	120	16.7	132.1	63.9	120.1
120	205	126	17.8	145.7	72.9	121.4
130	191	131	18.7	156.5	80.3	120.4
140	178	136	19.7	167.1	87.6	119.3
150	167	140	20.4	175.6	93.9	117.1
160	157	144	21.3	183.9	100.1	114.9

100 PERCENT STOCKING

Ketchikan Area		Site Index 100		Precommercial Thinning		
Age	Number of Trees Per Acre	Dominate Tree Height (feet)	Quadratic Mean Diameter (inches)	Merch. Cubic Foot Volume (100)	Merch. Board Foot Volume (1000)	Mean Annual Increment (merch. c.f.)
10	5,441	16	0.6	0.0	0.0	0.0
20	360	31	4.0	0.5	0.1	2.4
30	359	47	6.7	4.4	0.9	14.7
40	349	63	9.1	20.7	5.6	51.7
50	320	77	11.0	44.5	15.7	89.1
60	287	90	12.6	67.1	26.8	111.8
70	261	102	14.0	89.5	38.7	127.8
80	243	111	15.2	109.0	50.4	136.2
90	224	119	16.4	128.2	62.2	142.4
100	208	127	17.5	145.8	73.3	145.8
110	190	133	18.8	160.7	83.4	146.1
120	173	139	20.1	173.7	92.6	144.7
130	160	144	21.1	184.6	100.7	142.0
140	147	149	22.2	195.1	108.6	139.3
150	138	153	23.2	204.3	115.7	136.2
160	129	157	24.1	213.4	122.6	133.4

100 PERCENT STOCKING

Stikine Area Site Index 80 Precommercial Thinning						
Age	Number of Trees Per Acre	Dominate Tree Height (feet)	Quadratic Mean Diameter (inches)	Merch. Cubic Foot Volume (100)	Merch. Board Foot Volume (1000)	Mean Annual Increment (merch. c.f.)
10	6,417	11	0.3	0.0	0.0	0.0
20	359	20	2.6	0.0	0.0	0.0
30	359	32	4.8	0.0	0.0	0.0
40	358	47	6.9	1.7	0.3	4.3
50	357	61	8.6	15.5	3.3	31.1
60	340	73	9.9	32.7	10.2	54.4
70	315	84	11.1	51.0	18.3	72.8
80	295	94	12.1	67.4	26.7	84.3
90	277	102	13.0	82.7	35.3	91.9
100	261	109	13.9	97.9	43.7	97.9
110	249	115	14.8	111.7	52.2	101.6
120	237	121	15.6	125.4	60.4	104.5
130	225	126	16.3	137.1	67.7	105.5
140	214	131	17.0	147.7	74.6	105.5
150	203	135	17.7	157.2	80.9	104.8
160	192	138	18.4	166.0	87.0	103.7

100 PERCENT STOCKING

Stikine Area Site Index 100 Precommercial Thinning						
Age	Number of Trees Per Acre	Dominate Tree Height (feet)	Quadratic Mean Diameter (inches)	Merch. Cubic Foot Volume (100)	Merch. Board Foot Volume (1000)	Mean Annual Increment (merch. c.f.)
10	6,417	11	0.3	0.0	0.0	0.0
20	435	23	3.1	0.0	0.0	0.0
30	434	38	5.8	0.3	0.0	1.1
40	430	56	7.9	9.5	1.9	23.7
50	391	72	9.6	33.0	9.3	66.0
60	357	86	10.9	57.2	21.2	95.4
70	329	96	12.1	78.8	32.4	112.6
80	306	106	13.2	98.9	43.6	123.6
90	284	114	14.1	116.1	53.7	129.0
100	264	122	15.1	130.7	62.9	130.7
110	244	128	16.0	143.4	71.3	130.4
120	226	133	16.8	154.6	78.9	128.8
130	210	138	17.6	164.8	86.0	126.7
140	194	142	18.5	173.9	92.7	124.2
150	181	146	19.3	182.8	99.2	121.8
160	170	150	20.2	190.8	105.2	119.2

100 PERCENT STOCKING

Chatham Area Site Index 80 Precommercial Thinning

Age	Number of Trees Per Acre	Dominate Tree Height (feet)	Quadratic Mean Diameter (inches)	Merch. Cubic Foot Volume (100)	Merch. Board Foot Volume (1000)	Mean Annual Increment (merch. c.f.)
10	14,242	10	0.4	0.0	0.0	0.0
20	436	18	2.1	0.0	0.0	7.6
30	436	31	4.1	1.1	0.2	8.4
40	432	45	6.4	5.1	1.3	16.4
50	424	59	8.2	14.0	4.5	30.9
60	396	72	9.6	29.3	9.0	51.4
70	362	84	10.8	44.6	16.7	65.7
80	338	93	11.7	59.0	23.9	75.6
90	317	102	12.6	83.6	31.1	94.5
100	299	109	13.5	98.2	43.4	99.7
110	287	115	14.2	110.8	51.5	102.0
120	275	121	14.9	124.6	59.5	105.0
130	259	125	15.5	133.6	65.3	103.8
140	244	130	16.1	142.0	70.7	102.5
150	230	134	16.8	150.2	76.1	101.2
160	215	137	17.5	158.2	81.9	99.8

100 PERCENT STOCKING

Chatham Area Site Index 100 Precommercial Thinning

Age	Number of Trees Per Acre	Dominate Tree Height (feet)	Quadratic Mean Diameter (inches)	Merch. Cubic Foot Volume (100)	Merch. Board Foot Volume (1000)	Mean Annual Increment (merch. c.f.)
10	14,242	10	0.4	0.0	0.0	0.0
20	436	21	2.7	0.1	0.0	7.6
30	436	37	5.3	2.2	0.1	12.2
40	428	55	7.7	9.1	2.9	26.4
50	401	72	9.5	25.8	8.5	54.4
60	356	86	11.0	48.4	17.9	83.1
70	324	98	12.3	75.4	31.6	109.9
80	304	107	13.2	95.6	42.6	121.3
90	286	116	14.2	113.7	53.2	127.9
100	269	123	15.1	130.8	63.2	132.2
110	249	129	16.0	141.6	70.2	130.1
120	228	134	16.8	151.8	77.1	127.7
130	214	139	17.5	161.7	84.2	125.5
140	202	143	18.2	170.3	90.8	122.7
150	189	147	18.9	173.5	96.7	119.9
160	177	151	19.7	185.9	102.3	117.1

APPENDIX P

Silvicultural Systems

System Types:

The silviculture systems discussed in this publication are selection, shelterwood, seed-tree and clearcutting. These terms also refer to the method of harvest cutting that characterizes each system, but it is important for the reader to understand that these systems are processes of silviculture rather than only the method of harvest cutting.

Selection system- this systems involves the removal of mature and immature trees either singly or in groups at intervals. Regeneration is established almost continuously. The objective is maintenance of an uneven-aged stand, with trees of different ages or sizes intermingled singly or in groups. This system is esthetically pleasing, but is difficult to apply successfully unless the stand structure is favorable. The two types of selection are uniform or individual tree selection and group selection.

a. Individual (single) tree selection (IDT)- this method involves the removal of individual trees rather than groups of trees. In mixed stands it leads to an increase in the proportion of shade-tolerant species in the forest.

b. Group selection- this method can be used to maintain a higher proportion of the less shade-tolerant species in a mixture than individual tree selection. For this purpose larger harvest groups are more effective than smaller ones. In eastern timber types, groups a fraction of an acre in size are generally suitable. In some western timber types where the stands are open or the trees are very tall, the groups may be as large as an acre or two. When groups are of maximum size, they resemble small clearcut patches. The group selection system is distinguished from clearcutting in that the intent of group selection is ultimately to create a balance of age or size classes in intimate mixture or in a mosaic of small contiguous groups throughout the forest.

All of the remaining systems-shelterwood, seed-tree, and clearcutting- provide for even-aged management and result in stands of trees of about the same age. In each of these systems, it is important to plan the size, shape, and dispersion of the harvested areas to meet multiple-purpose management objectives.

Shelterwood system- This system removes the mature stand in a series of cuts. Regeneration of the new stand occurs under the cover of a partial forest canopy. A final harvest cut removes the shelterwood and permits the new stand to develop in the open as an even-aged stand. This system provides a continuing cover of either large or small trees. It is especially adapted to species or sites where shelter is needed for the new reproduction, or where the shelterwood gives the desired regeneration an advantage over undesired competing vegetation.

Seed-tree system- This system involves harvesting nearly all the timber on a selected area in one cut. A few of the better trees of the desired species are left well distributed over the area to reseed naturally. When feasible, the seed trees are harvested after regeneration is established. This system applies mainly to conifers.

Clearcutting- This system harvests all of the trees of an area in one cut for the purpose of creating a new, even-aged stand. The area harvested may be a patch, stand, or strip large enough to be mapped or recorded as a separate age class in planning for sustained yield under area regulation.. Regeneration is obtained through natural seeding, through sprouting of trees that were in or under the cut stand, or through planting or direct seeding. This system requires careful location of boundaries to fit the landscape and appropriate cleanup of debris to improve the appearance of the harvested area. The absence of reserved trees on the clearcut area facilitates site preparation and other area-wide cultural treatments.

In the past decades the silviculture of a number of mixed timber types was dictated by requirements for maintaining a high proportion of a single valuable species in the mixture, such as western white pine. Now, nearly all species are marketable, and silvicultural options which perpetuate any of these species are more acceptable.

Recent improvement in timber markets has coincided with greatly increased public interest in recreation, esthetics, wildlife, and other values of forests. In many places these nontimber values strongly influence the choice of silvicultural systems and cultural treatments such as site preparation and prescribed burning.

Biological Factors that Influence the Choice of Silvicultural Systems

Biological factors frequently prevent the use of certain silvicultural systems. Some of the more common of these factors governing the choice of a silvicultural system recur in many of the timber types.

a. Reproductive habits and requirements of the desired and competitive tree species are among the most important factors influencing the choice of a silvicultural system. If forests are regenerated in the shade, the shade-tolerant species will be favored and sooner or later will predominate. Fast-growing, shade-tolerant trees usually dominate stands regenerated in full light. The important forest trees of the United States are summarized in "Silvics of Forest Trees of the United States".

b. Wildlife requirements and problems are important in the choice of cultural measures, and also in the choice of silvicultural systems. Browsing animals are favored by systems that provide clearings of appropriate size, shape, and dispersal for production and utilization of low browse. Squirrels are favored by systems or rotation lengths that result in abundant seed production and mature trees for nest sites. Consumption of seed by birds and rodents and damage to young trees by browsing and gnawing animals are serious enough in some

timber types to influence the choice of silvicultural systems and cultural treatments.

c. Hazards created by insects and diseases are important in the choice of silvicultural systems. When stands are heavily attacked by serious disease or insect pests, it may be necessary to remove the affected trees or the entire stand. But protection against insects, such as shoot weevils of certain pines, is aided by maintaining a canopy over the reproduction, as in the shelterwood system.

d. Use of fire in forest culture also limit the choice of silvicultural systems. In a few forest types, periodic use of prescribed fire reduces hazardous accumulations of flammable debris and undesirable undergrowth. Periodic prescribed burning is adapted chiefly to even-aged stands, because the young regeneration present in all-aged stands is easily killed by fire. All-aged stands systems, on the other hand, leave less concentration of debris resulting from any one harvest cut and tend to make disposal of debris less essential.

e. Climatic hazards are another important element in the choice of a silvicultural system. For example, on sites subject to heavy frost near ground level, a new seedling crop must be started under a partial canopy of trees to protect the seedlings. On the other hand, certain mountain and coastal sites, subject to high wind velocities, should not be partially cut. Clearcutting is usually required on windy sites and in shallow-rooted forests on wet soils to avoid the risk of windthrow that occurs in partially cut stands.

f. Size, age and vigor of the trees in the existing stand are other serious constraints of biological factors. A production forest composed wholly of trees of advanced age and declining vigor ordinarily requires a heavy harvest cut such as a clearcut, seed-tree, or shelterwood. Attempts to use the selection system in overmature even-aged stands have consistently resulted in high mortality among remaining trees. The selection system is better suited to stands composed of trees which vary considerably in age, size and vigor.

g. Genetically improved trees is another natural factor in the choice of silvicultural systems. Improved strains of forest trees are coming out of the nurseries in increasing numbers, and superior trees of many important species will be produced in the future. With most species the growth potential of these improved varieties can be realized only if they are planted and grown in properly cultured even-aged stands.

Of course, certain factors can lead to a decision that no harvest cutting should be done. They may include unstable soils unsuited for road construction, shallow soils or severe sites where a new crop cannot be started, or areas that have unique value in the untouched state.

Finally, the ultimate choice of the system for a particular tract involves analysis of various managerial constraints. These include availability of manpower, equipment and capital and also of markets for different classes of timber. These factors have an important bearing on the efficiency of

operating under different silvicultural systems, but they vary so much with time and place that they are beyond the scope of this discussion.

Pacific Northwest Silvicultural Systems

Western Hemlock-Sitka Spruce

Hemlock-spruce forests occupy a coastal strip 2,000 miles long, extending from northern California to Prince William Sound, Alaska. The portion within the United States (Alaska, Washington, Oregon, and California) totals about 10 million acres. Toward the south, there is an admixture of redwood, Douglas-fir, red alder, western redcedar, Pacific silver fir, and lodgepole pine; toward the north and west, Alaska-cedar and mountain hemlock. Coastal forest stands are very dense, and timber volumes per acre in natural stands are among the highest in North America.

Climate within the coastal hemlock-spruce forest type is characterized by moderate temperatures, heavy precipitation, prolonged cloudiness, and frequent summer fog. Extended summer droughts are lacking. Average annual temperature and length of growing season decrease northward, as does fire hazard. Storm winds often sweep in from the Pacific Ocean causing repeated wind damage. Uprooting of trees is severe where a high water table, impervious soil layer, or thin soil over bedrock causes trees to be shallow rooted. Other high-hazard areas exist where topography constricts the wind and increases its velocity.

Western hemlock, the main component of the type, is prolific seeder. In Oregon and Washington it produces some seed most years with heavier crops every 3 to 4 years. In Alaska a heavy crop occurs every 5 to 8 years. The seed is very small and is disseminated considerable distance by the wind. Germination under forest conditions is excellent on such diverse material as moss, humus, decaying litter, and mineral soil.

Sitka spruce is also a good seed producer. Some seed is produced nearly every year. Substantial crops develop every 3 to 4 years in Oregon and Washington, and 5 to 8 years in Alaska. Dissemination of the seed is wide. Sitka Spruce will germinate on almost any kind of seedbed, including organic substance, if moisture is abundant; but germination is best on mineral soil. However, on young soils low in organic matter or clay content, subsequent survival and growth may be low.

Western hemlock is very shade tolerant. Sitka Spruce is less shade tolerant and tolerance probably decreases northward. In general, hemlock responds well to release after long periods of suppression. Sitka spruce responds well in diameter growth but may not respond as well in height growth. Hemlock-spruce is often considered to be a climax type, but western hemlock probably represents the true climax.

Clearcutting in units of 25 acres to several hundred acres is the most commonly used harvest-cutting system. Prompt natural forest

regeneration usually follows with full stocking or overstocking of tree seedlings on harvested areas. Most seedlings originate after cutting from seed disseminated by surrounding stands. However, some seedling, usually western hemlock, become established under the mature stand before cutting, survive the logging operation, and are released by it, thereby gaining a head start on the next rotation. Artificial regeneration by seeding or planting is used only in special situations, for example, to increase the proportion of spruce or to add a component of Douglass-fir. Control of competing vegetation plus planting may be necessary in some area.

Large clearcuts decrease the length of cutting boundary exposed to the wind relative to the area clearcut and facilitate selection of windfirm stand borders. Progressive strip cutting toward storm winds helps to reduce wind damage in high-hazard areas. The present trend is to select carefully the location, reduce the size, and vary the shape of clearcuts to improve the appearance of harvest-cutting areas. Smaller clearcuts may also provide better wildlife habitat.

In areas where dwarf mistletoe is prevalent, understory hemlock seedlings are infected by a shower of seed from mistletoe in the crowns of overstory trees. In these situations, complete removal of the overstory and destruction of infected seedlings are needed to control the parasite.

Even-aged coastal stands in Oregon and Washington can be regenerated by the shelterwood system. Of the main species, hemlock is the most shade tolerant; thus the leaving of an overstory, as in shelterwood cutting, is more favorable to hemlock than to spruce regeneration. Such cutting minimizes the reproduction of the moderately shade-tolerant Douglas-fir and the light-demanding red alder and lodgepole pine; it also provides some natural control of competing shrubs and herbaceous plants that spring up under full sunlight. In Alaska, experience with shelterwood cutting is lacking, but other partial cuttings have resulted in extremely dense regeneration, primarily western hemlock. Growth rate of western hemlock and Sitka spruce seedlings is far slower under partially cut stands than on clearcut areas; Sitka spruce, especially, is suppressed.

In areas of high public use where esthetics are important, the shelterwood system has an advantage over clearcutting. However, the application of shelterwood cutting to areas of steep topography should await availability of improved logging techniques and equipment that will permit repeated operations in the residual stand without causing excessive damage. Areas having high blowdown hazard should be avoided unless repeated thinnings have developed windfirmness in the stand. Use of the shelterwood system is limited in defective stands where cull logs become a physical obstacle to logging operations, and its use is not suited to areas infested with dwarf mistletoe. The shelterwood system is not yet feasible in Alaska because of the species composition, climate, terrain, and large proportion of overmature and defective trees.

The presence of seedlings in uneven-aged climax stands where individual trees or small groups have died is evidence that the selection system might be used in certain situations where timber production is not the major concern. Limited experience, however, has shown that old-growth hemlock-spruce stands have not responded well to selection cutting. Nonetheless, selection cutting may have application where it is necessary to maintain a continuous forest canopy. Examples are campgrounds and other areas of high recreation use, scenic areas, streamside stands, and stands along highways. In these situations, individual mature trees as well as defective and diseased trees should be cut. Periodic removal of selected trees in reserved strips along streams can minimize blowdown across the streams.

The seed tree system generally is impractical because exposed trees tend to uproot during late fall or winter storms.

APPENDIX Q

Timber Measure Comparisons

COMPARISON OF BOARD-FOOT VOLUMES AND BOARD-FOOT-CUBIC-FOOT RATIOS FOR THREE LOG
RULES (16 FT. LOGS)

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		Volume in board feet			Board feet per cubic foot		
Diameter	Volume						
at (in)	(ft ³)	Doyle	Scribner	Inter 1/4	Doyle	Scribner	Inter 1/4
6	4.3	4	18	20	0.92	4.13	4.59
8	7.1	16	32	40	2.23	4.47	5.59
10	10.6	36	50	65	3.38	4.70	6.11
12	14.8	64	79	95	4.32	5.24	6.42
14	19.7	100	114	135	5.08	5.78	6.85
16	25.3	144	159	180	5.69	6.28	7.11
18	31.5	196	213	230	6.22	6.76	7.30
20	38.5	256	280	290	6.65	7.27	7.53
25	59.0	441	459	460	7.47	7.78	7.80
30	83.9	676	657	675	8.06	7.83	8.05
35	113.1	961	876	925	8.50	7.92	8.18
40	146.7	1296	1204	1220	8.83	8.21	8.32
45	184.7	1681	1518	1550	9.10	8.22	8.39

Computed by Smalian's formula assuming 1/2 inch taper per 4 ft. (Vol.ft³)

16-ft log=0.021817(4D² + 8D +5.5) where D=diameter at small end in inches.

METRIC AND ENGLISH EQUIVALENTS

Lumber

1 MBF = 1,000 board feet

1 MMBF = 1,000,000 board feet

1 board foot = 1" X 12" X 12" rough sawn lumber

1,000 board feet, Scribner log scale (MBF) = 4.53 cubic meters (m³)

1,000 board feet, Scribner lumber tally (MBF) = 0.521 MBF, log scale

Weight

1 air-dry short ton (ADST) pulp = 2,000 pounds (lb)

1 metric ton (MT) = 0.90718 short ton

1 ADST = 1.1023 air dry metric ton pulp (ADMT)

1 bone-dry ton pulp (BDT; ALP) = 2,000 pounds (lb)

1 BDT = 1.0886 metric ton

1 metric ton (MT) western hemlock chips = 2.497 cubic meters (m³)

1 air-dry short ton pulp = 2.06 bone-dry units chips (BDU)

Land Area

1 hectare = 2.47 acres

APPENDIX R

Tlingit and Haida Tribal Status

Tlingit and Haida Tribal Status

A Report of the

**Central Council of the Tlingit and Haida
Indian Tribes of Alaska**

February, 1989

by

Charles W. Smythe, Ph.D.

In Association with
John Hope

Tlingit and Haida Political Organization

There are many references to Tlingit and Haida tribes and chiefs in the accounts by European explorers, fur traders, military men, and observers who entered southeast Alaska in the eighteenth and nineteenth centuries. Scientific investigations by ethnological observers and anthropologists in the late nineteenth and twentieth centuries established that tribal designations were references to localized groups or subdivisions of the Tlingit and Haida people. Although anthropologists occasionally use the term 'tribe' in descriptions of traditional Tlingit and Haida societies, it is used as a general term to refer to regional village groups. In anthropological terms, the Tlingit and Haida clans were the basic units of political, social, and ceremonial life.

Although we may speak of tribes among the Tlingit, these were traditionally only geographic groups, not political units. The Sitkans, or members of a similar group, might consider themselves to be distinguished from the inhabitants of other towns through local customs or manner of speech, but their true allegiances were to their several clans, which were the real units of Tlingit political, social, and ceremonial life. Each tribe or town contained several clans or segments of clans, relationships between which were not always friendly.

(de Laguna 1988:60)

There were 13 of these geographic groups into which the Tlingit were divided, each inhabiting an identified region and sharing residence in one or more communities; intermarrying, and remaining at peace (Langdon 1987:61). It is these groups which have often been referred to as 'tribes,' although anthropologically political unity was at the clan level. As will be described below, there was also regular social, economic, political, and ceremonial interaction among different clans and clan segments at the village level and occasionally uniting clan groups from different regions. It is important to note that the existence of the tribal subdivisions has been observed consistently throughout the historical period. "There has been a remarkable constancy in the identity of these tribes, the location of the principal villages of each and the approximate boundaries of their territories from the first reliable identifications made by the Russian missionary Father Veniaminov in 1835, through the observations and investigations of many scholars and travelers, to the investigations of Goldschmidt and Haas in 1946" (Rogers 1960:182).

The complex clan structures of Tlingit and Haida societies are a salient characteristic of these groups. Through membership in a clan, one gained the right to use and inherit clan property which was essential to social life and economic survival. Clan membership was matrilineal; and individuals had to marry outside of their own clan. In addition, Tlingit and

Haida clans belonged to one of two moieties or opposite sides. Known as Ravens or Wolves (or Eagles in the north), the sides inter-married and performed ceremonial services for each other. No other functions were performed by opposite sides, nor did they ever meet as social or political units. The clan was composed of one or more matrilineal lineages; the members of each lineage would be associated with a tribal house in the community. Lineage members were family groups comprised of sets of brothers and their wives and children, who lived together as a house-group. Each house-group functioned as a social and economic unit. The head of a lineage was known as "the master of the house," and the head of the most important lineage was the clan chief or "great man." The clan chief, in association with the heads of less important houses, constituted the council of chiefs which administered the affairs of the local clan (de Laguna *ibid.*; Oberg 1973:23-54).

The clan owned the most important property including hunting territory, fishing grounds, salmon streams, clan crests, ceremonial clothing and artifacts, shamanistic practices, names, songs, stories, and trading routes. A well-developed system of property rights and inheritance identified which family groups owned specific sites and tracts of land and who had access to clan land and property.¹ This property was administered by the chief on behalf of the clan; he was the steward and responsible for its protection, use and upkeep. The clan chief, in consultation with the council, would decide when salmon streams could be used or when to hold the complex, competitive memorial feasts at which the clan's crests and other ceremonial property would be displayed. They would organize war parties to defend against incursions into clan territory, and launch attacks against other groups. Often the chief would trade on behalf of the clan.

At a minimum, a village was comprised of two lineage groups from opposite sides. If the lineage expanded substantially in size, smaller "daughter lineages" would form additional house groups in the community. Sometimes the branch lineages became identified as separate clans. The larger communities held several clans or clan segments (lineages) of varying size and importance. Although there was no formal organization of clans into a larger political unit, each clan group functioned in association with the others in the community. Thus, the tribal areas identified with the 13 traditional groups mentioned above were comprised of the territories belonging to the clans residing together in the principal village and any smaller communities in the area. Under Tlingit and Haida property law, marriage provided access to clan lands and sites for members of the inter-marrying families. Family ties, shared use of land, reciprocal ceremonial relationships, and other practices served to unite the "tribal" groups, and link members of different groups in a larger unity.

¹ This complex system of property rights was acknowledged and described in the judgement of the Tlingit and Haida claims (Tlingit and Haida Indians of Alaska v. United States, Ct. Cls. 1959, Opinion pp. 4-5, 49-52).

This tribal relationship is evidenced in relationships between clans from different territories. Although Tlingit and Haida persons belonged to localized clan groupings as described above, it was possible for members of one group to call upon members of another for assistance and to initiate cooperative action. An example of this was reported in 1804 by Lisiansky, who learned that a message requesting assistance from the Angoon people was sent by the Sitkans during Baranof's raid in which he re-established Russian possession of the Sitka fort (see de Laguna 1960:146-49; Krause 1956:33). It is likely that this appeal was made through a family or clan relationship, and such an appeal would invoke a social obligation to defend the clan as a whole against an outside hostility, in this case an attack by Russian troops. In part, it would be a matter of honor for the more distant lineage to respond with assistance, since an attack on any segment of the clan is a grievance on the clan as a whole. Niblack (1970:310) also reports the formation of temporary alliances between villages based on clan relationships "for mutual benefit or protection," which he notes is in contrast to the more typical "clannish feeling" that normally discouraged inter-village relationships.²

The tribal relationship among different clans, and between members of different communities, was based on a shared set of customs of the Tlingit people. Family ties, a common language and kinship system, occupation of contiguous tracts of land, trade, alliance and warfare, and many other characteristics and practices united the Tlingit into a common identity. An awareness of this identity as Tlingit people is evident in the historical record. The sharing of these characteristics present something of the aspect of a "nation." This common identity or nationhood was noticed by the Russians, who referred to the Tlingit as 'Koloshi,' irrespective of their clan or territorial affiliation.

Tlingit and Haida Tribal Land Claims

The social and cultural life of the Tlingit and Haida Indians continued without the imposition of another authority until the late 19th century. Contacts with explorers and traders during the late 18th and 19th centuries occurred as ships plied the waters of southeast in search of trade. At the few Russian trading posts, traders largely depended upon the Tlingit to come to them and initiate trade. The Tlingit and Haida, always adept at trade, favored the

² The tribal relationship among members of different clans has received formal recognition in the federal courts in the Klukwan artifacts case. In this case, the proposed sale of clan artifacts has been challenged by members of other clans in the community, on the basis that the community as a whole would suffer if the artifacts were to leave the village permanently. The relationship between clans from opposite sides would be disrupted because, without the availability of the crest objects for use and display in ceremonials, traditional ceremonies would be curtailed and reciprocal ceremonial obligations between different clans could not be enacted.

relationships, and the new trade introduced additional ways to accumulate wealth and prestige through hunting and trapping. The Russian administration did not alter the traditional socio-political control of Tlingit groups, or the exclusive Tlingit and Haida use and occupancy of all the lands in southeast Alaska. Even with the sometimes forceful establishment of small trading posts, the Russians did not seek to impose their jurisdiction on their Indian neighbors.³ A similar practice of non-intervention followed under the American flag for 15-20 years after the purchase of Alaska in 1867.⁴

Shortly following the transfer of Alaska to the United States, the Tlingit people organized as a whole to express their objection to the transfer. As reported in 1869 by a special agent of the Treasury Department, councils of tribal chiefs convened in Sitka at which protests were voiced about the transfer (Tlingit and Haida Indians of Alaska v. United States, Ct. Cls. 1959, Finding of Fact No. 66, pp.80-81). The chiefs did not approve of the transfer because Alaska was sold without their consent, and the Territory still belonged to them. They felt the Russians had resided in the area with their consent, unlike the new American administration. The report of these meetings by an agent of the federal government provides the first record of councils of Tlingit tribal chiefs, as representatives of local clan groups, meeting together and protesting against incursions into Tlingit territory.

Commencing in the late 1870's, mining and commercial fishing opportunities attracted individuals and enterprises into the region. By the turn of the century, this activity resulted in substantial disruptions to the traditional settlement patterns and social organization of the Tlingit and Haida people. Fishing, mining, logging, and other industries started to develop in areas which had previously been exclusively in the possession of traditional Indian groups.

By 1889, 11 sawmills and 36 salmon canneries were in operation in southeast Alaska. Fishing stations were located by whites at every point affording a good supply of fish. As a result of this activity, the Indians were having a difficult time securing enough fish for their own use, game was largely frightened away, and there was little work for the Indians in the canneries which imported Chinese workmen. In 1890 the Indians of southeastern Alaska secured the services of an attorney who wrote to the President concerning their problems. From then on the Indians made claims and protests over their treatment and the rapidly diminishing state of their land and water holdings. They

³ These points were reported as findings of fact in the Tlingit and Haida claims suit: see Tlingit and Haida Indians of Alaska v. United States, Ct. Cls. 1959, Finding of Fact Nos. 18, 54-57, pp. 41-42, 66-68.

⁴ Exceptions were the instances of bombardment of Tlingit villages, which caused severe, if temporary, localized disruptions of communities. During their administration of Alaska, the U.S. military destroyed several Tlingit villages in reprisal for Indian attacks on white settlers, without recognizing that the Indian actions were consistent with Tlingit law which required payment and even death, in equal measure, as just compensation for hostile acts.

finally asked that they be given a reservation and the protection of the Government. There was little official response to repeated protests and requests for help and the official policy of the Government seemed to have been to ignore the claims of these Indians arising from the aboriginal use and occupancy of southeastern Alaska and instead to create a situation in which the Indians would be forced to assimilate into the white man's society and system of property ownership. (Ibid.:21)

Increases in non-Native settlement were supported by the Organic Act of 1884 (expanded in 1900) which provided a civil government to Alaska but, more significantly to the Indian population, created a means by which immigrants could acquire title to traditional clan lands (Ibid.:85-109). The trend continued with other federal land legislation and Presidential proclamations providing for town sites and industrial sites (1891), the cutting of timber (1891), prohibiting Native fish traps (1897), extending the Homestead Act to Alaska (1898), and creating the Metlakatla Reservation (1891), the Tongass National Forest (1902 and 1909), and Glacier Bay National Park (1921).

The restrictions on access to traditional territories and subsistence sites, and particularly the decline in the salmon runs before the turn of the century, were major sources of disruption to Tlingit and Haida groups and resulted in the movement of people from outlying settlements into the principal villages of each region, most of which remain inhabited today. As described in the quotation given above, protests and objections to the activities of fishing, mining, and timber interests were made by Tlingit and Haida chiefs to governmental officials, including the President. The protests and claims were often undertaken by councils of chiefs representing large portions of the Tlingit and Haida people. In 1899, for example, a delegation of eight chiefs addressed the Territorial Governor on behalf of the loss of salmon waters, fur-trapping areas, fishing streams, hunting areas, and other lands. These chiefs represented clans from the Stikine, Taku, Hoonah, and Juneau (Auk) tribes. Acting singly and in groups, Tlingit and Haida chiefs continually sought protection from the incursions of new settlers before and after the turn of the century. For more discussion of historical events in this period which brought fundamental changes to the Tlingit and Haida culture and economy, see *Tlingit and Haida Indians of Alaska v. United States*, Ct. Cls. 1959, Finding of Fact Nos. 96-102, pp. 109-119.

In 1912, in part as a response to these changing conditions in southeast Alaska, Tlingit, Haida, and Tsimshian Indians formed an organization to improve conditions and further "progress" among the Indians. Although the avowed goal of the Alaska Native Brotherhood was acculturation, an important subsidiary goal was Indian rights. These goals received widespread support and approval from the Tlingit and Haida, who joined the organization "almost to a man, and the auxiliary, the Alaska Native Sisterhood, almost to a woman" (Drucker 1965:223). The Alaska Native Brotherhood (ANB) and Sisterhood (ANS) became the

first formal organizations of all Tlingit and Haida people. The ANB and ANS formed local chapters, called camps, in each community. Recognition of Alaska Native voting rights and abolition of a dual school system were among the early issues contended by the organizations.

In 1929, the ANB voted to pursue Tlingit and Haida land claims against the federal government. A resolution was passed to secure a jurisdictional act permitting the group to bring a lawsuit in the U.S. Court of Claims. This effort succeeded in 1935, when the Act of June 19, 1935 (49 Stat. 388), Relating to the Tlingit and Haida Indians of Alaska, was passed by Congress authorizing the Tlingit and Haida Indians to bring suit against the United States in the U.S. Court of Claims. This act identified the Tlingit and Haida Indians of Alaska as "all those Indians of whole or mixed blood of the Tlingit and Haida Tribes who are residing in ... the Territory of Alaska." The act authorized the Indians to bring claims "for lands or other tribal or community property rights taken from the Tlingit and Haida Indians by the United States without compensation," for the lack of compensation for such property or property rights appropriated by the United States for its own uses without consent, and for the government's failure or refusal to protect the claimants' interest in such property. Other sections of the Act also contained references to tribes and tribal communities of the Tlingit and Haida. The language of the Act was explicit that the federal government would be conducting transactions with tribal entities, and with a central council in particular that would represent all the Tlingit and Haida people. Section 7 required that "each tribal community shall prepare a roll of its tribal membership, which roll shall be submitted to a Tlingit and Haida central council for its approval." The Act also mandated that a Tlingit and Haida central council prepare a combined roll of members of all tribal communities.

In 1939, the ANB and ANS passed a resolution to form an executive committee that would serve in the capacity of the central council required in the Act, and to constitute each camp as the "tribal community" referred to in Section 7. The Department of Interior (DOI) rejected this action because the ANB/ANS organizations were seen as "non-tribal intermediaries" which were not coextensive with the Tlingit and Haida Tribes. The principal objection was that membership in the ANB was not limited to Tlingit and Haida Indians. The DOI wrote that a delegation of authority to the proposed ANB/ANS executive committee would be contrary to the best interests of the Tlingit and Haida people, since these organizations were not "truly representative of all the members of the Tlingit and Haida Tribes" (Letter from Oscar L. Chapman to William L. Paul, June 13, 1940). After rejecting the ANB/ANS resolution, the DOI provided acceptable procedures for organizing the central council.

In this communication, the federal government made explicit their intent to deal directly with the "Tlingit and Haida Tribes," thereby providing tribal recognition to the Tlingit

and Haida people and the mandated central council. Oscar Chapman, Assistant Secretary of the Interior, responded that it would be inappropriate to empower ANB/ANS to select and employ an attorney to pursue the case because, in part, "Our policy in matters of this nature is to require that contracts which contemplate the rendition of legal services in behalf of an Indian Tribe be made, not with some non-tribal intermediary, but between the tribe and the attorney as principals" (Ibid.). His letter also states that the jurisdictional act does not contemplate claims brought by individuals, but only those which involve tribal or communal property rights. "We think it is clear, therefore, that the jurisdictional act authorizes the Tlingit and Haida Indian Tribes to institute suits in the Court of Claims only for amounts claimed and due the tribes as tribal claims. The jurisdictional act does not give the court jurisdiction to hear and determine the legal and equitable claims of individual Indians."

In this letter of June 13, 1940, Oscar L. Chapman indicated that southeastern villages that have organized and adopted constitutions under the Indian Reorganization Act of 1934 (48 Stat. 984), as amended for Alaska in 1936 (49 Stat. 1205), "will be recognized by the Department as being the proper authority" to select members of the Tlingit and Haida Claim Committee, which in turn will select and employ an attorney on behalf of the tribe. In a subsequent letter, this instruction was modified to ensure that uniform procedures would be followed in all communities with Tlingit and Haida residents, since some of the communities were not organized under the IRA. Chapman directed that "a general council or mass meeting" be held in each community to select persons for the Tlingit and Haida Claims Committee (Letter from Oscar L. Chapman to Claude M. Hirst, February 12, 1941). On March 8, 1941, the Office of Indian Affairs promulgated official instructions as to the manner of electing the committee members to serve on the Tlingit and Haida Claims Committee.

After following all of the instructions given by DOI, the first official convention of the Tlingit and Haida Claims Committee was held in Wrangell, Alaska, on April 9-11, 1941. The purpose was the selection and employment of attorneys to formulate and prosecute the claims of these Indians against the United States under the Tlingit and Haida Jurisdictional Act of June 19, 1935 (49 Stat. 388). *This meeting was the first federally recognized gathering of representatives of all Tlingit and Haida Tribes.*

Nearly six years later, on January 3, 1947, a contract was signed between the Tlingit and Haida Indians of Alaska and attorneys to represent them in their land claims before the U.S. Court of Claims. The Commissioner of Indian Affairs Glenn L. Emmons approved the contract under delegated authority from the Secretary of the Interior, on March 6, 1947. This was the first time that the Tlingit and Haida were officially treated as an Indian Tribe in a contract approved by the federal government. Several extensions were subsequently approved.

Descendants of the traditional Tlingit and Haida tribes, who were recognized as chiefs or active leaders of Tlingit and Haida clans, were permitted to intervene as parties plaintiff in the Tlingit and Haida land claims brought before the Indian Claims Commission (Tlingit and Haida Indians of Alaska v. United States, Ct. Cls. 1959, Finding of Fact No. 2, p. 31). These persons identified themselves as representatives of the regional Tlingit and Haida Tribes (Killisnoo, Kulu, Henya, Taku, Huna, Yakutat, Lituya, Sitka, Kake, Stikine, Auk, Chilkat, Sanya Tlingit Tribes and Kalgani Haida Tribe).

On October 7, 1959, the Court of Claims decided in favor of the Tlingit and Haida Tribes of Alaska. The court found that the Indians held Indian title to the lands and waters of southeastern Alaska and that "the United States both failed and refused to protect the interests of these Indians in their lands and other property in southeastern Alaska within the meaning of section 2 of the special jurisdictional act and that the United States is liable under such act to compensate the Indians for the losses so sustained" (Tlingit and Haida Indians of Alaska v. United States, Ct. Cls. 1959, Opinion p. 24).

In conclusion, we hold that the plaintiffs have established their use and occupancy, i.e., Indian title, of the lands and waters in southeastern Alaska shown on the map, marked plaintiff's exhibit 168 and reproduced as a part of this opinion; that they were using and occupying that land according to their native manner of use and occupancy in 1867 when the United States acquired Alaska from Russia; that following the purchase of Alaska in 1867 these Indians continued to exclusively use and occupy the same areas of land and water as previously, and that such use and occupancy was not interfered with by the United States or its citizens until 1884; that beginning in 1884 and continuing thereafter, these Indians lost most of their land in southeastern Alaska through the Government's failure and refusal to protect the rights of the Indians in such lands and waters, through the administration of its laws and through provisions of the laws themselves; that a large area of land and water in southeastern Alaska were (sic.) actually taken without the consent of the Indians, through Presidential proclamations issued pursuant to law, and through reservation of part of the land for Canadian Indians under the Act of March 3, 1891. The plaintiffs are entitled to recover for all usable and accessible land which they used and occupied, ...
(Ibid.: 26)

The amount of recovery was reserved for further proceedings.

The issue of the tribal status of the Tlingit and Haida Indians was raised by the federal government during the trial, and the court gave it consideration in its opinion (Ibid.:13-17). The government contended that the Indians were not entitled to be compensated because they were not organized politically as a tribe or tribes and therefore could not have owned any "tribal or community property" for which compensation was allowed in the language of the jurisdictional act. The court responded that, in approving the jurisdictional act, "Congress was

fully aware" that the Indians of southeastern Alaska were organized differently from most forms of tribal organization found in the United States, and that they held land differently. Also, the court reasoned that the absence of treaties with these Indians "is not significant" because Congress prohibited any further dealings with Indians by treaty, in the Act of March 3, 1871 (16 Stat. 544, 566), only four years after the acquisition of Alaska from Russia. The court also pointed out that, prior to the passage of the special jurisdictional act, the Department of Interior had prepared a report suggesting that the claims be treated as though they were tribal claims despite the differences in tribal political organization in each group and despite the fact that land was owned by smaller family or clan groups. The DOI suggested an amendment to the act providing for compensation only in the form of a "tribal" fund to be used to secure "tribal" assets. Congress followed these suggestions and prohibited individual claims and per capita award payments.⁵ In summary, the court decided,

We have no difficulty in concluding that in enacting the special jurisdictional act under which this suit is brought, Congress intended that the Indians identified in section 1 should be allowed to sue for and recover judgement for the loss of property or rights in property which belonged to them in the manner in which they owned land and property; and that when Congress employed the word "tribal" to describe the property which should be the basis of the suit under the act, it did not use the word in its usual sense.

(Ibid.:17)

Thus, the court recognized the traditional clan structure and principles of property ownership of Tlingit and Haida societies, and concluded that the use of the term 'tribal' by Congress and the Department of Interior for the purposes of the jurisdictional act was a special use of the term, cognizant of these differences.⁶ *In this way the jurisdictional act was*

⁵ This point was again emphasized by Oscar L. Chapman, Assistant Secretary for Indian Affairs, in a letter of June 13, 1940, to William L. Paul, as described above.

⁶ It should be pointed out that the DOI made a vigorous defense against assertions that no tribes or valid possessory rights existed in southeast Alaska during hearings of claims for the protection of Indian fishing rights 15 years earlier. DOI attorneys developed extensive arguments on behalf of aboriginal possessory rights and previous federal recognition of tribes in Alaska for the DOI Hearing in Claims of the Natives of the Towns of Hydaburg, Klawock, and Kake, Alaska, Pursuant to the Provisions of Section 201.21b of the Regulations for Protection of the Commercial Fisheries of Alaska, 1944. See DOI Reply Brief and Proposed Amended Finding of Fact and Recommendation of Petitioners, pp. 10-27.

With regard to tribal recognition, it should be noted that the social organization of Tlingit and Haida societies is structurally equivalent to that found in the federally recognized tribes of the Washington and Oregon coasts. Tlingit and Haida are the northernmost groups of the Northwest coast cultures (Drucker 1965).

instrumental in the creation of a representative tribal organization for the Tlingit and Haida Indians that was recognized by the federal government.⁷

In 1965, Congress amended the 1935 jurisdictional act at the request of John A. Carver, Secretary of the Interior. The stated purposes of the amendments were to clarify the authority of the central council and to provide flexibility for the distribution of benefits. In his request for the amendments to Wayne N. Aspinall (March 10, 1965), the Secretary stated the substitution "will create a representative tribal governing body with all the authority necessary to work with the Bureau of Indian Affairs and with the smaller organized groups of Tlingits and Haidas." The previously described Tlingit and Haida Claims Committee had been recognized by the Department for the purposes of selecting and employing an attorney for the tribes, but by these amendments the Department was preparing the way to constitute a recognized tribal governing body as mandated by the jurisdictional act. The amended act provided rules and procedures for the existing Central Council to be recognized as the official Central Council of the Tlingit and Haida Indians. The Central Council was authorized to carry out administrative tasks and to prepare plans for the use of judgement funds, and to exercise powers of expenditure and distribution of the funds as may be authorized by Congress.

The next Central Council convention was held in Sitka during May of 1966. At this meeting, 49 delegates from 18 community councils reorganized the structure of their organization, based on the amended jurisdictional act. The delegates adopted more stringent rules of elections for the community councils and provided for the election of seven officers who would comprise the Executive Committee (Metcalf 1985:19). In January of 1968, the Court of Claims awarded \$7,546,153.80 to the Tlingit and Haida Indians for their lost lands. The Central Council chose to preserve the award in a trust fund and use the interest it generated to operate programs for the benefit of all Tlingit and Haida people.

Growth and Development of the Central Council of the Tlingit and Haida Indian Tribes

In subsequent years, the Central Council expanded its operations and carried out additional tribal functions beyond those authorized by the jurisdictional act of 1935, as

⁷ The court was also explicit in its discussion of the unity among the Tlingit people and Haida people above the level of the family and clan. Although there was not a political unit that was identified with the entire group, the subgroups occupied contiguous stretches of territory and were closely united by common customs, language, family ties, trade, ceremonies, and a consciousness of their oneness as a homogeneous group (Tlingit and Haida Indians of Alaska v. United States, Ct. Cls. 1959, Opinion p. 3).

amended in 1966. This development was founded upon federal acknowledgement that the Central Council was a tribal government for the Tlingit and Haida tribes, and that the trust relationship between the tribes and the federal government extends beyond the management of the land claims judgement fund. In the early stages of this transition, the then Associate Solicitor for Indian Affairs within DOI, Thomas W. Fredericks, wrote an opinion on the nature of the trust relationship and responding particularly to whether the relationship is conditional on maintenance of the fund, stating, "the legal relationship between the [Tlingit and Haida] tribes and the United States will not be altered by the expenditure of the funds although certain practical aspects of that relationship may change." He stated clearly that there was a continuing trust relationship between the government and the Tlingit and Haida tribes which was not limited to obligations based on the trust fund, and which could only be altered by Congressional action:

The special trust relationship between the United States and the tribes is not dependent solely upon the Treasury's holding their judgement funds. *It is dependent, instead, on the legal status of the tribes as tribes.* In the event of a complete transfer of the funds to the Council, the trust obligations of the United States with respect to the funds would terminate. Other aspects of the trust relationship would not, however, be affected. *Only Congressional action can significantly alter or terminate the relationship.* (emphasis added)
(Fredericks 1978)

Summarized below are the more important authorities and activities that were adopted by the Central Council, and recognized by federal, state, and other tribal governments.

I. Program Agreements between the Central Council and the Bureau of Indian Affairs.

These agreements placed Bureau of Indian Affairs (BIA) programs and activities provided in prior years through the Southeast Agency in Juneau, Alaska, and the agency personnel managing and providing such programs and activities, under the direction of the Central Council of the Tlingit and Haida Indian Tribes of Alaska.⁸ The first agreement was signed on February 17, 1971, by John Borbridge Jr., for the Central Council and Alexander S. McNabb, Director of Operating Services, BIA Central Office. As stated in the first program agreement, the intent of both parties "is to empower the Tlingit and Haida people to determine their own destiny and affairs involving them, to the maximum feasible extent, in the formulation, conduct, and administration of all [BIA] programs for their benefit."

⁸ Non-delegatable trust responsibilities and services to the Annette Island Reservation and its people are excluded from these agreements.

The basis for entering into a contract with Tlingit and Haida was an opinion issued by the Solicitor, Department of the Interior dated April 3, 1970, concerning a request by the Mescalero Apache Tribe to assume the direction of federal employees at their agency. The Solicitor determined that a provision of authority existed for the BIA to transfer to an Indian Tribe the direction of federal employees (R.S. Sec. 2072, 25 U.S.C. § 48 (1964)). The provision refers specifically to the delegation of authority by the Secretary of the Interior to an Indian "tribe." Therefore, in executing the agreement, the BIA extended recognition of tribal authority to the Central Council of the Tlingit and Haida Indian Tribes of Alaska.

The initial agreement stated that it was the first phase of longer term plan to involve the Central Council in BIA programs. The contract agreement was referred to as a 'Buy Indian Contract.' On May 21, 1976, the Acting Contract Administrator for the BIA, Juneau Area Office, advised the Central Council that the Buy Indian Contract will be supplanted by a P.L. 93-638 contract with statutory procedures differing from Buy Indian. The change was ultimately made and the Council continues to this day to provide services under a 93-638 contract. The Central Council operates 23 programs funded by federal and state agencies.

II. Tlingit and Haida Regional Housing Authority

In 1971, the Alaska Legislature passed a bill authorizing the creation of regional housing authorities for the specific purpose of implementing the National Indian Program for Indian Housing. This action was taken in response to a study showing severe housing problems in rural Alaska, and an intensive lobbying effort by the Central Council and the Alaska Federation of Natives. The legislation specified that the Central Council could form a housing authority for southeast Alaska. The Tlingit and Haida Regional Housing Authority was established in 1973. Progress was rapid in the early years and by 1975 the Authority had sponsored the construction of 360 single-family housing units in ten communities in southeast Alaska (Metcalf 1985:25).

The Tlingit and Haida Regional Housing Authority is unusual because its authority is recognized by both state and federal governments. To qualify for state funding, the Authority is incorporated under state statutes. It is also recognized as a tribal housing authority for federal programs. The Central Council appoints the Commissioners.

III. Tlingit and Haida Credit Union

The Tlingit and Haida Credit Union is a federally chartered credit union established in November, 1972, for the benefit of members of the Central Council. An investment of \$50,000.00 was authorized and an advance was obtained from the Tribal Trust Fu

implement and initially fund the union. The Central Council of the Tlingit and Haida Indian Tribes was issued a charter and a separate entity was established under National Federal Credit Union auspices.

IV. Tlingit and Haida Regional Electrical Authority

The growth of housing in villages occurred at such a rate that by 1975, five villages had reached the limits of their electrical generating capacity.⁹ The situation reached critical proportions when the U.S. Department of Housing and Urban Development determined that no further housing projects would be approved in those villages with inadequate generating capacity. The Tlingit and Haida Regional Housing Authority identified the Rural Electrification Administration as a primary source of low income loans. To qualify for the loans, the Central Council formed the Tlingit and Haida Electrical Authority in 1976. The authority was chartered under state statutes to operate in villages and to become eligible for federal funding.

During the life of the organization, electrical facilities have been replaced or improved in each of the five villages. A small loan fund is used to upgrade facilities in the villages as needed. There are currently over 1,000 electrical consumers being served by the Authority (ibid.).

V. Indian Tribal Government Tax Status

The Central Council of the Tlingit and Haida Indian Tribes of Alaska is listed by the Internal Revenue Service for the purpose of the Indian Tribal Government Tax Status Act of 1982.

VI. Other Federal Grants and Contracts

Other tribal contracts include a contract with the Alaska Native Health Service in 1975 to provide a health training seminar. Also in 1975, the Central Council received a grant of \$125,000.00 from the U.S. Dept. of Commerce, Office of Minority Business Enterprise, to provide Technical Assistance to Minority contractors. Currently, the Council is a participant in the BIA Demonstration Project.

⁹ The five villages are Hoonah, Angoon, Kake, Klawock, and Kasaan.

VII. Published Lists of BIA Recognized Entities

The Central Council of the Tlingit and Haida Indian Tribes of Alaska has been listed in the Federal Register as an Alaska Native Entity recognized and eligible to receive services from the BIA since 1982. Also, since the Central Council was involved in a tribal judgment, a tribal roll for the Central Council was approved by the Bureau of Indian Affairs. This roll was listed as a Tribal judgment roll in 25 CFR. The BIA, acting as Trustee for the Tlingit and Haida Tribes, continues as custodian for the Tribes' judgment funds. The Central Council has obtained a BIA Loan Guarantee.

VIII. Recognition by National Indian Organizations

The Central Council of the Tlingit and Haida Indian Tribes of Alaska has had active membership in the National Congress of American Indians since 1964. The Central Council has also been a member of the National Tribal Chairmen's Association, and participated in the Northwest Tribal Association.

IX. Recognition by the President of the United States

The Central Council was invited to President Reagan's meeting with selected Tribal leaders in 1988.

Conclusions

According to standard anthropological concepts, the localized clan was the fundamental socio-political unit of Tlingit and Haida societies. Ownership of property, inheritance, group allegiance, territorial affiliations, and social ranking were defined and delineated principally by clan membership. Clans were also divided into two opposite sides which prescribed reciprocal social and ceremonial obligations among members of different clans. Communities were comprised of the members of more than one clan or clan segment; they interacted regularly in social, economic, ceremonial, and political activities. The larger villages, together with any associated subsidiary settlements, were united by intermarriage, intersecting clan relationships, and reciprocal ceremonial obligations, and were distinguished as groups with well-defined territories. These groups were recognized consistently throughout the historical period and were frequently identified as tribes. The tribal relationships which united each of these groups also united members of different groups into a larger, nation-like

entity with common customs, language, and identity. This larger entity has also received historical recognition by outsiders; during the Russian period, colonial administrators, traders, and clergy referred to the Tlingit people with a single term that did not distinguish among smaller clan units.

After the transfer of Alaska to the United States in 1867, the Tlingit and Haida experienced substantial disruptions to their traditional jurisdiction, use, and occupancy of southeastern Alaska. Chiefs of the various tribal groups, singly and in councils, appeared before American governmental authorities in Alaska, or contacted the President, to protest the incursions of new settlers, the loss of their land, and forced disruptions to their traditional subsistence activities and community life. Objections were first made by a tribal delegation following the transfer of Alaska to American authorities. The disruptions accelerated substantially during the 1880's and continued at a significant rate thereafter, despite continued protests and objections by tribal leaders who met repeatedly in representative councils to object and protest the loss of their tribal lands and possessory rights.

In the twentieth century, this tribal action was transferred to the courts, after the passage of the special jurisdictional act in 1935. This act recognized the existence of Tlingit and Haida Tribes in Alaska, and was instrumental in bringing about the formation of a federally-recognized representative tribal organization. Subsequent and repeated transactions between the federal government and the tribes led to the formation of a central council which was officially constituted as the representative tribal organization for the tribes. The Opinion of the U.S. Court of Claims independently granted tribal recognition for the Tlingit and Haida Tribes. The Opinion was very detailed and explicit on the existence of a tribal political organization in southeast Alaska, despite the differences from other forms of tribal organization found in the contiguous states. In recognition of this finding, the jurisdictional act of 1935 was amended in 1965, specifically to create a representative tribal governing body with all the authority necessary to work with the BIA and the Tlingit and Haida communities. The Central Council was reorganized accordingly, at the direction of the BIA. Following the judgement award, the Central Council carried out the functions of planning, administering, and managing expenditures from the Trust Fund, in a trust relationship with the BIA.

In the intervening years, the Central Council has sought and received recognition from BIA to carry out significant additional tribal governmental functions based on their tribal trust relationship with the federal government. This relationship has been repeatedly affirmed by the DOI and the BIA in official actions and communications. Thus, since the issues of tribal ownership and loss of tribal property were brought before Congress in the 1930's, the Tlingit and Haida Tribes have received recognition of their tribal status from Congress, the DOI, and the U.S. Court of Claims.

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